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TRACKING DATA EVALUATION REPORT FOR STS-119 and ISS

Daily Period: Mar 21 at 225928 GMT through Mar 22 at 232850 GMT
Mission Period: Mar 14 at 000000 GMT through Mar 22 at 232850 GMT

1. EXECUTIVE SUMMARY

This report summarizes all GN and SN tracking data for ISS and STS (except for ISS one-way Doppler data) since the beginning of mission support for STS-119. The executive summary of this report provides a daily overview of the number of passes received for ISS and STS as well as a daily summary of significant tracking data anomalies. The remainder of this report provides a detailed cumulative mission summary of all GN and SN tracking data for ISS and STS.

The C-band tracking support for ISS started on March 14, 2009. STS-119 was launched on March 15, 2009 at 234344 GMT. STS-119 docked with ISS on March 17 at 212000 GMT.

Ten STS C-band passes from EAFF, FRCF, WL2F, and WLPQ were received during the daily reporting period. The C-band passes received during the daily reporting period had nominal angle and range tracking data.

Five 1-way STS S-band passes from AGO3 and MIL3 were received during the daily reporting period. The MIL3 1-way pass on March 22, 2009 at 044000 GMT had variations resulting in 50% anomalous Angle1 data. The remaining 1-way STS S-band passes during the daily reporting period had nominal angle tracking data.

There were no 2-way STS S-band passes received during the daily reporting period.

The cumulative mission percentages of anomalous SN TDRS-3, TDRS-4, TDRS-5, TDRS-6, and TDRS-10 tracking data for STS-119 are 1.6, 2.7, 2.6, 0.8, and 3.0, respectively. The anomalous SN tracking data has consisted of various Doppler drifts, biases, and/or spikes.

No significant tracking data problems were noted for ISS during the daily reporting period. One tracking data problem was noted for STS-119 during the daily reporting period. The MIL3 1-way pass on March 22, 2009 at 044000 GMT had variations resulting in 50% anomalous Angle1 data. No other tracking data problems were noted for STS-119 during the daily reporting period.

2. INTRODUCTION

This memorandum, which is produced by the Metric Tracking Data Evaluation (MTDE) Task located within the Flight Dynamics Facility (FDF) at Goddard Space Flight Center (GSFC), provides a Ground Network (GN) and Space Network (SN) tracking data evaluation report for the Space Transportation System (STS) and for the International Space Station (ISS). This report includes information about data processing, network validation, and network calibration for STS and ISS missions.

3. DATA PROCESSING

The metric tracking data evaluated for this report was processed using the Goddard Trajectory Determination System (GTDS), which is the primary orbit determination system used by the FDF. This system produces Observed minus Computed (O-C) values by comparing actual tracker measurements with computed measurements derived from weighted least-squares orbital solutions. Orbital solutions for ISS are derived by using 24 hours of C-band range tracking data as well as SN two-way range and Doppler tracking data if available. Orbital solutions for STS are derived by using one revolution (approximately 96 minutes) of SN two-way Doppler tracking data, GN S-band range and two-way range-rate tracking data, and C-band range tracking data.

4. NETWORK VALIDATION

The validation of metric tracking data is the process of determining the quality of tracking data measurements received from the trackers. The output from the GTDS orbital solutions is evaluated to assess the accuracy and usefulness of the tracking data. The O-C values (also known as residuals) and the amount of data edited from the orbital solutions (a 3-sigma edit criterion is normally used) are statistically analyzed to identify data anomalies and to assess the overall network tracking performance. Tracking data anomalies are identified and noted in this report. Anomalous tracking data as well as tracking data that is flagged invalid by the tracker is generally not used for orbit determination.

5. NETWORK CALIBRATION

The calibration of metric tracking data is the process of using statistical evaluation techniques to determine tracker and network performance. Anomalous tracking data as well as tracking data that is flagged invalid by the tracker is generally not used for network calibration. Calibration parameters for each tracker, which are computed from the GTDS calibration O-C statistics for each pass, are defined as follows:

Tracker Mean: A weighted sample mean of pass O-C means. The tracker mean is an estimate of the bias in the measurements.

Deviation: A weighted 2-sigma sample standard deviation (SD) of pass O-C means about the tracker mean. A Student's t correction for small sample size is applied when necessary. If there are fewer than four passes for a tracker, the deviation is not computed. The deviation is a measure of the bias consistency.

Average Pass SD: A weighted Root Mean Square (rms) of pass O-C standard deviations. This parameter provides an upper limit for the average pass system noise.

Root Sum Square: The Root Sum Square (rss) of the tracker mean, half the deviation, and the average pass SD. This parameter is an estimate of the average measurement error. The rss is not computed if there are fewer than four passes for a tracker.

All of these statistical parameters are weighted by the number of points in each pass.

6. GN TRACKING DATA EVALUATION CRITERIA

GN S-band tracking data for STS is comprised of x-angle, y-angle, range and range-rate tracking data. GN C-band tracking data for STS and ISS is comprised of azimuth angle, elevation angle, and range tracking data.

S-band and C-band GN tracking data taken below 7° in elevation is not used for orbit determination or for network calibration. Poor quality x-angle or azimuth angle tracking data taken in antenna keyhole regions (where the absolute value of the y-angle is greater than or equal to 70° for X-Y antennas or the absolute value of the elevation angle is greater than or equal to 70° for Az-EI antennas) is not considered anomalous. Tracking data received during periods of antenna masking is excluded from the tracker calibration statistics and is not considered anomalous.

S-band GN angle tracking data is generally considered to be anomalous if more than 20 percent of the data flagged valid has residuals greater than or equal to 0.05°. C-band GN angle tracking data is generally considered to be anomalous if more than 20 percent of the angle data flagged valid has residuals greater than or equal to 0.10°. S-band GN range tracking data is generally considered to be anomalous if more than 20 percent of the data flagged valid has residuals greater than or equal to 20 meters. C-band GN range tracking data is generally considered to be anomalous if more than 20 percent of the data flagged valid has residuals greater than or equal to 50 meters. S-band 2-way GN range-rate tracking data is generally considered to be anomalous if more than 20 percent of the data flagged valid has residuals greater than or equal to greater than 0.5 meters per second.

Occasionally a C-band tracker will track the wrong target vehicle when STS and ISS are in very close proximity to each other. This pass will be identified in the FDF reports with the name of the intended target vehicle. If no usable tracking data is received from the intended target vehicle, then this pass will be identified as an anomalous pass.

7. SN TRACKING DATA EVALUATION CRITERIA

SN tracking data for ISS is comprised of one-way S-band and K-band Doppler tracking data. Only the one-way S-band Doppler tracking data is used in the orbit determination process for ISS. The ISS one-way S-band Doppler tracking data residuals, which measure the offset from the nominal frequency of the ISS transponder, are generally considered nominal as long as the residuals are less than 700 Hertz. Reports are generated by the FDF on a weekly and monthly basis that summarize the frequency offset for the ISS transponders. If the frequency offset exceeds 700 Hertz, FDF personnel will issue a report recommending an adjustment to the forward and transmit frequencies for ISS.

If 2-way SN tracking of ISS is available, then the FDF will use the coherent range and Doppler tracking data as well as C-band tracking data for orbit determination purposes.

SN tracking data for STS is comprised of two-way S-band Doppler tracking data. The Doppler tracking data for STS is used for determining the quality of the tracking service. Each Doppler tracking data observation is evaluated and categorized as usable, as anomalous, or as invalid. An invalid observation is one that has been flagged as invalid in the tracking data message (TDM) at White Sands Complex (WSC). Each tracking data event is rated as a success or as a failure. A success is a tracking data event that has at least 70 percent usable Doppler tracking data. A failure is an event that has less than 70 percent usable Doppler data.

8. GN TRACKING DATA PASSES

The following table lists the number of daily and mission S-band and C-band passes received from each tracker for both ISS and STS having a maximum elevation of at least 7°. Only passes with a maximum elevation of at least 7° are used by the FDF for orbit determination and anomaly reporting. The number of passes listed in this table may not agree with the actual number of passes scheduled.

Tracker	ISS		STS-119	
	Daily	Mission	Daily	Mission
AGO3	0	0	2	13
ANTQ	0	3	0	1
ASCQ	0	6	0	1
EAFF	0	6	1	7
FRCF	0	7	4	23
KMRF	0	0	0	1
MIL3	0	0	3	12
MILA	0	0	0	12
WL2F	0	10	3	18
WLPQ	0	5	2	17
TOTALS	0	37	15	105

9. GN TRACKING DATA ANOMALIES

The following table contains a chronological listing of all GN tracking data anomalies for both ISS and STS for the entire mission. Tracking data anomalies are only reported for passes having a maximum elevation above 7°. Tracking data in the keyhole region or tracking data affected by station masking is not considered anomalous.

20090319/080500	20090319/081510	MILA	STS-119	Angle1 mean = -0.062 deg, sd = 0.017 deg, 66.7% anomalous.
20090320/231542	20090320/232254	FRCF	STS-119	Pass 100% anomalous. Problem reported at the station; pass unusable.
20090322/044000	20090322/045100	MIL3	STS-119	Angle1 variations: mean = 0.027 deg, sd = 0.051 deg, Angle1 50.0% anomalous.

10. GN STATISTICS

The following report provides GN tracking data residual statistics for both ISS and STS. Statistics, consisting of mean, standard deviation and number of points, are computed for each pass for angle, range, and range-rate tracking data residuals. The statistics are summarized for each tracking station for each satellite. The statistics are computed for two different time intervals. The first time interval corresponds to the tracking data summarized on a daily basis. The second time interval corresponds to the tracking data summarized for the entire mission. Group statistics, consisting of mean, deviation, average pass standard deviation, and rss, are also computed for each tracker for both ISS and STS.

FLIGHT DYNAMICS FACILITY GN STATISTICS PROGRAM

20090321/225928 = START TIME FOR STATISTICS INTERVAL 1
20090322/232850 = STOP TIME FOR STATISTICS INTERVAL 1

20090314/000000 = START TIME FOR STATISTICS INTERVAL 2
20090322/232850 = STOP TIME FOR STATISTICS INTERVAL 2

LO SPEED TRACKING DATA

N = INCLUDE TT&C DATA (Y/N)

SATELLITE(S)
ISS
STS-119

STATION(S)
ALL

STATISTICS INTERVAL 1

STATION = AGO3 SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)							
	MEAN	SD	PTS		MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A	M ANOMALY C
20090322/160730	20090322/161620	0.036	0.015	39	100.0	-0.006	0.014	39	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090322/174220	20090322/175120	-0.021	0.022	19	100.0	-0.007	0.007	19	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	

STATION = AGO3 SATELLITE = STS-119

RESIDUALS								VDNA NOISE				RATING						
	MEAN	DEV	SD	RSS	PTS	PASSES		MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY				
ANGLE 1 (DEG)	0.017	-----	0.018	-----	58	2		0.0086	0.0086	0.0086	2	2	100.0					
ANGLE 2 (DEG)	-0.006	-----	0.012	-----	58	2		0.0039	0.0091	0.0079	2	2	100.0					
RANGE (M)	-----	-----	-----	-----	0	0		-----	-----	-----	0	2	0.0					
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0		-----	-----	-----	0	2	0.0					

STATION = AGO3 SATELLITE = STS-119 SUMMARY

STATION = EAFF SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)					ANGLE 2 RESIDUALS (DEG)					RANGE RESIDUALS (M)					RANGE-RATE RESIDUALS (M/S)										
MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	M	SD	PTS	%USE A	M	SD	PTS	%USE A	M	ANOMALY C
20090321/234142	20090321/235312	0.006	0.007	64 100.0	0.003	0.007	64 100.0	-0.207	26.452	64	95.3	-----	-----	-----	-----	0	0.0	0	0.0	0	0.0	0	0.0	0	

STATION = EAFF SATELLITE = STS-119

RESIDUALS					VDNA NOISE					RATING																	
MEAN	DEV	SD	RSS	PTS PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	MEAN	SD	PTS	%USE A	M	SD	PTS	%USE A	M	SD	PTS	%USE A	M	ANOMALY C		
ANGLE 1 (DEG)	0.006	-----	0.007	-----	64	1	0.0042	0.0042	0.0042	1	1	100.0	ANGLE 2 (DEG)	0.003	-----	0.007	-----	64	1	0.0039	0.0039	0.0039	1	1	100.0		
RANGE (M)	-0.207	-----	26.452	-----	64	1	11.8528	11.8528	11.8528	1	1	95.3	RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	0	-----	-----	-----	0	0.0

STATION = EAFF SATELLITE = STS-119 SUMMARY

STATION = FRCF SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)					ANGLE 2 RESIDUALS (DEG)					RANGE RESIDUALS (M)					RANGE-RATE RESIDUALS (M/S)										
MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	M	SD	PTS	%USE A	M	SD	PTS	%USE A	M	ANOMALY C
20090322/011724	20090322/012812	-0.008	0.006	55 100.0	-0.005	0.009	55 100.0	0.137	17.435	55	100.0	-----	-----	-----	-----	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20090322/060742	20090322/061806	-0.007	0.007	38 100.0	0.002	0.011	38 100.0	-0.533	11.687	38	100.0	-----	-----	-----	-----	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20090322/074242	20090322/075424	-0.003	0.008	63 100.0	0.003	0.008	68 100.0	10.088	19.050	68	95.6	-----	-----	-----	-----	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20090322/223442	20090322/224436	0.014	0.010	32 100.0	0.008	0.018	32 100.0	-1.631	15.506	32	100.0	-----	-----	-----	-----	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

STATION = FRCF SATELLITE = STS-119

RESIDUALS					VDNA NOISE					RATING																	
MEAN	DEV	SD	RSS	PTS PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	MEAN	SD	PTS	%USE A	M	SD	PTS	%USE A	M	SD	PTS	%USE A	M	ANOMALY C		
ANGLE 1 (DEG)	-0.002	0.028	0.008	0.016	188	4	0.0026	0.0071	0.0051	4	4	100.0	ANGLE 2 (DEG)	0.001	0.016	0.011	0.014	193	4	0.0038	0.0086	0.0062	4	4	100.0		
RANGE (M)	3.218	18.736	16.783	19.488	193	4	7.8377	13.2249	11.0092	4	4	98.4	RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	0	-----	-----	-----	0	0.0

STATION = FRCF SATELLITE = STS-119 SUMMARY

STATION = MIL3 SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)							ANGLE 2 RESIDUALS (DEG)							RANGE RESIDUALS (M)							RANGE-RATE RESIDUALS (M/S)						
	MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A		MEAN	SD	PTS	%USE A	M	ANOMALY C	
20090322/044000	20090322/045100	0.027	0.051	14	50.0	A	-0.010	0.022	17	94.1	-	-	-	-	0	0.0	-	-	-	0	0.0	1	Anomaly				
20090322/061500	20090322/062710	0.005	0.010	25	100.0		-0.006	0.009	35	100.0	-	-	-	-	0	0.0	-	-	-	0	0.0	1					
20090322/210300	20090322/211540	0.002	0.020	40	100.0		-0.017	0.009	40	100.0	-	-	-	-	0	0.0	-	-	-	0	0.0	1					

STATION = MIL3 SATELLITE = STS-119

RESIDUALS

VDNA NOISE

RATING

	MEAN	DEV	SD	RSS	PTS	PASSES		MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.007	-----	0.026	-----	79	3		0.0099	0.0263	0.0162	3	3	91.1	
ANGLE 2 (DEG)	-0.012	-----	0.012	-----	92	3		0.0058	0.0079	0.0077	3	3	98.9	
RANGE (M)	-----	-----	-----	-----	0	0		-----	-----	-----	0	3	0.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0		-----	-----	-----	0	3	0.0	

STATION = MIL3 SATELLITE = STS-119 SUMMARY

STATION = WL2F SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)

	MEAN	SD	PTS	%USE A
20090321/235012	20090322/000042	0.002	0.010	31 100.0
20090322/030306	20090322/031500	-0.000	0.015	47 100.0
20090322/043806	20090322/052206	0.003	0.012	60 100.0

ANGLE 2 RESIDUALS (DEG)

RANGE RESIDUALS (M)

RANGE-RATE RESIDUALS (M/S)

STATION = WL2F SATELLITE = STS-119

RESIDUALS

VDNA NOISE

RATING

	MEAN	DEV	SD	RSS	PTS	PASSES		MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	-----	0.013	-----	138	3		0.0053	0.0145	0.0102	3	3	100.0	
ANGLE 2 (DEG)	-0.008	-----	0.014	-----	144	3		0.0034	0.0141	0.0095	3	3	100.0	
RANGE (M)	4.478	-----	9.548	-----	144	3		7.1404	9.0748	8.1654	3	3	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0		-----	-----	-----	0	3	0.0	

STATION = WL2F SATELLITE = STS-119 SUMMARY

STATION = WLPQ SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)

	MEAN	SD	PTS	%USE A
20090322/210518	20090322/211830	0.002	0.006	68 100.0
20090322/224130	20090322/225412	-0.004	0.002	53 100.0

ANGLE 2 RESIDUALS (DEG)

RANGE RESIDUALS (M)

RANGE-RATE RESIDUALS (M/S)

STATION = WLPQ SATELLITE = STS-119

RESIDUALS

VDNA NOISE

RATING

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	-0.001	-----	0.005	-----	121	2	0.0014	0.0022	0.0019	2	2	100.0	
ANGLE 2 (DEG)	0.005	-----	0.003	-----	121	2	0.0013	0.0014	0.0014	2	2	100.0	
RANGE (M)	8.638	-----	13.960	-----	121	2	7.2397	10.2538	8.7560	2	2	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	2	0.0	

STATION = WLPQ SATELLITE = STS-119 SUMMARY

COMBINED STATISTICS FOR EACH STATION

STATION = AGO3
SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.017	-----	0.018	-----	58	2	0.0086	0.0086	0.0086	2	2	100.0		
ANGLE 2 (DEG)	-0.006	-----	0.012	-----	58	2	0.0039	0.0091	0.0079	2	2	100.0		
RANGE (M)	-----	-----	-----	-----	0	0	-----	-----	-----	0	2	0.0		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	2	0.0		

COMBINED STATISTICS SUMMARY FOR AGO3

STATION = EAFF
SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.006	-----	0.007	-----	64	1	0.0042	0.0042	0.0042	1	1	100.0		
ANGLE 2 (DEG)	0.003	-----	0.007	-----	64	1	0.0039	0.0039	0.0039	1	1	100.0		
RANGE (M)	-0.207	-----	26.452	-----	64	1	11.8528	11.8528	11.8528	1	1	95.3		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	1	0.0		

COMBINED STATISTICS SUMMARY FOR EAFF

STATION = FRCF
SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.006	-----	0.007	-----	64	1	0.0042	0.0042	0.0042	1	1	100.0		
ANGLE 2 (DEG)	0.003	-----	0.007	-----	64	1	0.0039	0.0039	0.0039	1	1	100.0		

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	-0.002	0.028	0.008	0.016	188	4	0.0026	0.0071	0.0051	4	4	100.0	
ANGLE 2 (DEG)	0.001	0.016	0.011	0.014	193	4	0.0038	0.0086	0.0062	4	4	100.0	
RANGE (M)	3.218	18.736	16.783	19.488	193	4	7.8377	13.2249	11.0092	4	4	98.4	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	4	0.0	

COMBINED STATISTICS SUMMARY FOR FRCF

STATION = MIL3

SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.007	-----	0.026	-----	79	3	0.0099	0.0263	0.0162	3	3	91.1		
ANGLE 2 (DEG)	-0.012	-----	0.012	-----	92	3	0.0058	0.0079	0.0077	3	3	98.9		
RANGE (M)	-----	-----	-----	-----	0	0	-----	-----	-----	0	3	0.0		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	3	0.0		

COMBINED STATISTICS SUMMARY FOR MIL3

STATION = WL2F

SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.002	-----	0.013	-----	138	3	0.0053	0.0145	0.0102	3	3	100.0		
ANGLE 2 (DEG)	-0.008	-----	0.014	-----	144	3	0.0034	0.0141	0.0095	3	3	100.0		
RANGE (M)	4.478	-----	9.548	-----	144	3	7.1404	9.0748	8.1654	3	3	100.0		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	3	0.0		

COMBINED STATISTICS SUMMARY FOR WL2F

STATION = WLPO

SATELLITE = STS-119

	RESIDUALS						VDNA NOISE						RATING	
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	-0.001	-----	0.005	-----	121	2	0.0014	0.0022	0.0019	2	2	100.0		
ANGLE 2 (DEG)	0.005	-----	0.003	-----	121	2	0.0013	0.0014	0.0014	2	2	100.0		
RANGE (M)	8.638	-----	13.960	-----	121	2	7.2397	10.2538	8.7560	2	2	100.0		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	2	0.0		

COMBINED STATISTICS SUMMARY FOR WLPO

STATISTICS INTERVAL 2

STATION = AGO3 SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)					
	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C	
20090316/184240	20090316/185030	0.031	0.013	31	100.0	-0.014	0.007	31	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090317/170330	20090317/170950	0.066	0.011	8	100.0	-0.028	0.011	16	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090317/183600	20090317/185140	0.040	0.034	42	90.5	-0.017	0.010	42	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090318/172810	20090318/173750	0.042	0.014	34	100.0	-0.019	0.010	34	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090318/190410	20090318/191350	-0.009	0.016	22	100.0	-0.008	0.016	28	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090319/162000	20090319/162910	0.035	0.016	11	100.0	-0.014	0.010	20	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090319/175500	20090319/180610	0.015	0.031	36	97.2	-0.012	0.013	36	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090320/164630	20090320/165720	0.028	0.018	37	100.0	-0.016	0.011	37	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090320/182310	20090320/183220	-0.032	0.026	20	100.0	-0.015	0.015	24	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090321/153910	20090321/154820	0.043	0.014	13	100.0	-0.014	0.009	23	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090321/171410	20090321/172450	0.029	0.027	37	100.0	-0.005	0.012	37	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090322/160730	20090322/161620	0.036	0.015	39	100.0	-0.006	0.014	39	100.0	-----	-----	0	0.0	-----	0	0.0	1
20090322/174220	20090322/175120	-0.021	0.022	19	100.0	-0.007	0.007	19	100.0	-----	-----	0	0.0	-----	0	0.0	1

STATION = AGO3 SATELLITE = STS-119

RESIDUALS					VDNA NOISE					RATING						
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY			
ANGLE 1 (DEG)	0.024	0.051	0.023	0.042	349	13	0.0029	0.0231	0.0110	13	13	98.6				
ANGLE 2 (DEG)	-0.013	0.012	0.012	0.018	386	13	0.0026	0.0152	0.0072	13	13	100.0				
RANGE (M)	-----	-----	-----	-----	0	0	-----	-----	-----	0	13	0.0				
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	13	0.0				

STATION = AGO3 SATELLITE = STS-119 SUMMARY

STATION = AGO3 SATELLITE = ISS

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)					
	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C	
20090315/210306	20090315/211554	0.004	0.003	58	100.0	-0.004	0.006	58	100.0	-1.885	6.326	58	100.0	-----	0	0.0	0
20090315/223848	20090315/225036	0.005	0.002	41	100.0	-0.003	0.005	41	100.0	-2.425	8.166	41	100.0	-----	0	0.0	0
20090317/202342	20090317/203448	0.001	0.003	62	100.0	-0.008	0.004	62	100.0	-2.423	21.014	62	100.0	-----	0	0.0	0

STATION = ANTQ SATELLITE = ISS

RESIDUALS					VDNA NOISE					RATING						
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY			
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.003	-----	0.003	-----	161	3	0.0012	0.0014	0.0013	3	3	100.0	
ANGLE 2 (DEG)	-0.005	-----	0.005	-----	161	3	0.0013	0.0057	0.0040	3	3	100.0	
RANGE (M)	-2.230	-----	14.206	-----	161	3	4.5078	8.6083	6.1131	3	3	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	3	0.0	

STATION = ANTO SATELLITE = ISS SUMMARY

		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090317/220012	20090317/220924	0.005	0.002	31	100.0	-0.001	0.008	31	100.0	4.080	6.238	31	100.0	-----	-----	-----	0 0.0 0

STATION = ANTO SATELLITE = STS-119

		RESIDUALS				VDNA NOISE				RATING				
		MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.005	-----	0.002	-----	31	1	0.0008	0.0008	0.0008	1	1	1	100.0	
ANGLE 2 (DEG)	-0.001	-----	0.008	-----	31	1	0.0040	0.0040	0.0040	1	1	1	100.0	
RANGE (M)	4.080	-----	6.238	-----	31	1	2.5367	2.5367	2.5367	1	1	1	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	1	1	0.0	

STATION = ANTO SATELLITE = STS-119 SUMMARY

		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090315/162100	20090315/163148	0.002	0.005	41	100.0	0.010	0.006	41	100.0	3.803	14.491	41	100.0	-----	-----	-----	0 0.0 0
20090315/175618	20090315/180736	-0.001	0.005	51	100.0	0.010	0.006	51	100.0	5.682	17.247	51	98.0	-----	-----	-----	0 0.0 0
20090316/164730	20090316/170000	0.001	0.004	65	100.0	0.002	0.004	69	100.0	9.381	10.478	69	100.0	-----	-----	-----	0 0.0 0
20090317/055206	20090317/060324	-0.000	0.002	64	100.0	0.007	0.005	64	100.0	6.270	15.406	64	100.0	-----	-----	-----	0 0.0 0
20090317/154006	20090317/155148	0.003	0.004	50	100.0	-0.003	0.007	50	100.0	6.611	17.052	50	98.0	-----	-----	-----	0 0.0 0
20090317/171506	20090317/172606	-0.000	0.005	48	100.0	0.012	0.008	48	100.0	1.674	14.318	48	100.0	-----	-----	-----	0 0.0 0

STATION = ASCQ SATELLITE = ISS

		RESIDUALS				VDNA NOISE				RATING				
		MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.001	0.004	0.004	0.005	319	6	0.0004	0.0037	0.0025	6	6	6	100.0	
ANGLE 2 (DEG)	0.006	0.014	0.006	0.011	323	6	0.0004	0.0043	0.0029	6	6	6	100.0	
RANGE (M)	5.898	6.849	14.815	16.309	323	6	7.6611	17.6598	13.6348	6	6	6	99.4	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	6	6	0.0	

STATION = ASCQ SATELLITE = ISS SUMMARY

STATION = ASCQ SATELLITE = STS-119		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090316/172206	20090316/173218	0.001	0.005	47	100.0	0.013	0.005	47	100.0	-3.518	10.507	47	100.0	-----	-----	-----	0 0.0 0

STATION = ASCQ SATELLITE = STS-119		RESIDUALS				VDNA NOISE				RATING						
		MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY		
ANGLE 1 (DEG)		0.001	-----	0.005	-----	47	1	0.0018	0.0018	0.0018	1	1	100.0			
ANGLE 2 (DEG)		0.013	-----	0.005	-----	47	1	0.0012	0.0012	0.0012	1	1	100.0			
RANGE (M)		-3.518	-----	10.507	-----	47	1	5.1062	5.1062	5.1062	1	1	100.0			
RANGE-RATE (M/S)		-----	-----	-----	-----	0	0	-----	-----	-----	0	1	0.0			

STATION = ASCQ SATELLITE = STS-119 SUMMARY

STATION = EAFF SATELLITE = ISS		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090316/014512	20090316/015600	0.006	0.009	54	100.0	-0.000	0.006	54	100.0	-1.350	23.546	54	98.1	-----	-----	-----	0 0.0 0
20090316/031954	20090316/033130	0.000	0.006	63	100.0	-0.005	0.011	63	100.0	1.078	17.255	63	98.4	-----	-----	-----	0 0.0 0
20090316/094554	20090316/095730	-0.001	0.006	67	100.0	-0.004	0.007	67	100.0	5.283	19.621	66	97.0	-----	-----	-----	0 0.0 0
20090316/112142	20090316/113106	0.003	0.011	29	100.0	-0.000	0.006	29	100.0	8.596	18.289	29	100.0	-----	-----	-----	0 0.0 0
20090317/021130	20090317/022330	-0.005	0.015	62	100.0	-0.003	0.008	68	100.0	0.889	16.182	68	98.5	-----	-----	-----	0 0.0 0
20090317/083742	20090317/084842	-0.004	0.008	55	100.0	-0.004	0.009	55	100.0	12.229	24.073	55	90.9	-----	-----	-----	0 0.0 0

STATION = EAFF SATELLITE = ISS		RESIDUALS				VDNA NOISE				RATING						
		MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY		
ANGLE 1 (DEG)		-0.001	0.011	0.010	0.011	330	6	0.0050	0.0113	0.0071	6	6	100.0			
ANGLE 2 (DEG)		-0.003	0.005	0.008	0.009	336	6	0.0049	0.0063	0.0055	6	6	100.0			
RANGE (M)		3.958	13.045	19.960	21.368	335	6	12.6056	19.2360	15.8974	6	6	97.0			
RANGE-RATE (M/S)		-----	-----	-----	-----	0	0	-----	-----	-----	0	6	0.0			

STATION = EAFF SATELLITE = ISS SUMMARY

STATION = EAFF SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090317/102300	20090317/103212	0.002	0.008	41	100.0	0.000	0.010	41	100.0	4.919	8.572	41	100.0	-----	0 0.0 0
20090318/010354	20090318/011506	0.007	0.009	59	100.0	-0.003	0.008	59	100.0	9.899	25.224	59	89.8	-----	0 0.0 0
20090318/104054	20090318/104954	0.013	0.015	5	100.0	0.000	0.006	5	100.0	-19.822	11.403	5	100.0	-----	0 0.0 0
20090320/002242	20090320/003406	0.007	0.007	61	100.0	0.001	0.014	61	100.0	-3.222	18.761	61	100.0	-----	0 0.0 0
20090320/231648	20090320/233854	0.008	0.013	15	100.0	0.006	0.012	15	100.0	-8.942	20.900	15	93.3	-----	0 0.0 0
20090321/085100	20090321/090154	0.004	0.005	57	100.0	0.003	0.007	57	100.0	-3.390	20.072	57	98.2	-----	0 0.0 0
20090321/234142	20090321/235312	0.006	0.007	64	100.0	0.003	0.007	64	100.0	-0.207	26.452	64	95.3	-----	0 0.0 0

STATION = EAFF SATELLITE = STS-119

RESIDUALS								VDNA NOISE				RATING				
MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	MEAN	SD	PTS	%USE A M ANOMALY C
ANGLE 1 (DEG)	0.006	0.005	0.008	0.010	302	7	0.0032	0.0137	0.0055	7	7	100.0	-----	-----	0 0.0 0	
ANGLE 2 (DEG)	0.001	0.007	0.010	0.010	302	7	0.0029	0.0136	0.0051	7	7	100.0	-----	-----	0 0.0 0	
RANGE (M)	0.495	16.063	21.332	22.799	302	7	4.8630	16.1082	11.3361	7	7	96.4	-----	-----	0 0.0 0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	7	0.0	-----	-----	-----	0 0.0 0

STATION = EAFF SATELLITE = STS-119 SUMMARY

STATION = FRCF SATELLITE = ISS

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090315/025224	20090315/030424	-0.007	0.009	68	100.0	0.002	0.008	68	100.0	0.596	13.666	68	98.5	-----	0 0.0 0
20090315/042848	20090315/043924	-0.009	0.007	43	100.0	-0.008	0.010	43	100.0	4.110	21.786	43	100.0	-----	0 0.0 0
20090315/091854	20090315/092936	-0.003	0.010	52	100.0	0.003	0.014	52	100.0	7.250	23.588	52	96.2	-----	0 0.0 0
20090315/105354	20090315/110530	-0.002	0.008	65	100.0	0.006	0.010	65	100.0	2.510	18.589	65	98.5	-----	0 0.0 0
20090316/081100	20090316/082018	-0.000	0.009	17	100.0	-0.004	0.015	17	100.0	4.725	20.383	17	100.0	-----	0 0.0 0
20090317/034800	20090317/035818	-0.008	0.011	39	100.0	-0.016	0.016	39	100.0	11.056	23.055	39	97.4	-----	0 0.0 0
20090317/101254	20090317/102424	0.001	0.007	63	100.0	0.002	0.010	63	100.0	-5.726	24.086	63	96.8	-----	0 0.0 0

STATION = FRCF SATELLITE = ISS SUMMARY

RESIDUALS								VDNA NOISE				RATING				
MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	MEAN	SD	PTS	%USE A M ANOMALY C
ANGLE 1 (DEG)	-0.004	0.009	0.009	0.011	347	7	0.0044	0.0115	0.0065	7	7	100.0	-----	-----	0 0.0 0	
ANGLE 2 (DEG)	-0.001	0.018	0.011	0.015	347	7	0.0064	0.0142	0.0100	7	7	100.0	-----	-----	0 0.0 0	
RANGE (M)	2.617	13.256	20.705	21.897	347	7	12.8557	23.6165	17.8628	7	7	98.0	-----	-----	0 0.0 0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	7	0.0	-----	-----	-----	0 0.0 0

STATION = FRCF SATELLITE = ISS SUMMARY

STATION = FRCF SATELLITE = STS-119

		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090316/024224	20090316/025118	-0.002	0.006	39	100.0	0.005	0.006	41	100.0	1.453	9.421	41	100.0	-----	-----	-----	0 0.0 0
20090316/085800	20090316/090724	-0.006	0.008	31	100.0	0.002	0.011	31	100.0	4.330	8.320	31	100.0	-----	-----	-----	0 0.0 0
20090316/103100	20090316/104042	0.001	0.010	48	100.0	0.002	0.013	48	100.0	0.920	10.759	47	97.9	-----	-----	-----	0 0.0 0
20090317/023212	20090317/024254	-0.009	0.012	55	100.0	-0.006	0.018	55	100.0	5.542	11.876	55	100.0	-----	-----	-----	0 0.0 0
20090317/084954	20090317/085912	-0.006	0.009	41	100.0	0.002	0.015	41	100.0	-4.942	10.719	41	100.0	-----	-----	-----	0 0.0 0
20090318/023900	20090318/025024	-0.004	0.006	61	100.0	-0.006	0.013	61	100.0	-1.497	18.899	61	100.0	-----	-----	-----	0 0.0 0
20090318/072942	20090318/073930	-0.000	0.008	26	100.0	0.005	0.025	26	96.2	6.504	14.340	26	100.0	-----	-----	-----	0 0.0 0
20090318/090442	20090318/091624	-0.002	0.007	67	100.0	0.002	0.007	67	100.0	10.162	20.151	67	95.5	-----	-----	-----	0 0.0 0
20090319/013024	20090319/014224	0.001	0.005	63	100.0	-0.001	0.008	68	100.0	7.695	27.966	68	95.6	-----	-----	-----	0 0.0 0
20090319/030706	20090319/031712	-0.004	0.010	34	100.0	-0.017	0.012	34	100.0	2.708	22.069	34	94.1	-----	-----	-----	0 0.0 0
20090319/075648	20090319/080748	-0.005	0.005	57	100.0	0.003	0.010	57	100.0	3.883	13.663	57	100.0	-----	-----	-----	0 0.0 0
20090319/093200	20090319/094306	-0.002	0.006	60	100.0	0.005	0.007	60	100.0	6.298	17.401	60	100.0	-----	-----	-----	0 0.0 0
20090320/015812	20090320/020918	-0.006	0.007	58	100.0	-0.001	0.012	58	100.0	-2.596	21.782	58	96.6	-----	-----	-----	0 0.0 0
20090320/064906	20090320/065848	-0.008	0.007	33	100.0	-0.005	0.011	33	100.0	5.788	16.292	33	100.0	-----	-----	-----	0 0.0 0
20090320/082342	20090320/083524	-0.007	0.005	62	100.0	0.001	0.007	67	100.0	5.224	20.449	67	98.5	-----	-----	-----	0 0.0 0
20090320/231542	20090320/232254	-----	-----	0	0.0 A	-----	-----	0	0.0 A	-----	-----	0	0.0 A	-----	-----	-----	0 0.0 0 Anomaly
20090321/004924	20090321/010124	-0.011	0.010	68	100.0	0.004	0.008	68	100.0	4.068	20.095	68	98.5	-----	-----	-----	0 0.0 0
20090321/022630	20090321/023606	-0.008	0.006	27	100.0	-0.005	0.014	27	100.0	8.014	17.675	27	100.0	-----	-----	-----	0 0.0 0
20090321/071524	20090321/072648	-0.005	0.009	60	100.0	0.016	0.022	60	96.7	1.263	19.745	60	98.3	-----	-----	-----	0 0.0 0
20090322/011724	20090322/012812	-0.008	0.006	55	100.0	-0.005	0.009	55	100.0	0.137	17.435	55	100.0	-----	-----	-----	0 0.0 0
20090322/060742	20090322/061806	-0.007	0.007	38	100.0	0.002	0.011	38	100.0	-0.533	11.687	38	100.0	-----	-----	-----	0 0.0 0
20090322/074242	20090322/075424	-0.003	0.008	63	100.0	0.003	0.008	68	100.0	10.088	19.050	68	95.6	-----	-----	-----	0 0.0 0
20090322/223442	20090322/224436	0.014	0.010	32	100.0	0.008	0.018	32	100.0	-1.631	15.506	32	100.0	-----	-----	-----	0 0.0 0

STATION = FRCF SATELLITE = STS-119

		RESIDUALS				VDNA NOISE				RATING				
		MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)		-0.004	0.010	0.008	0.010	1078	22	0.0020	0.0098	0.0046	22	23	98.6	
ANGLE 2 (DEG)		0.001	0.013	0.012	0.014	1095	22	0.0030	0.0124	0.0062	22	23	98.4	
RANGE (M)		3.558	8.758	18.014	18.877	1094	22	3.5909	16.2340	10.8382	22	23	97.1	
RANGE-RATE (M/S)		-----	-----	-----	-----	0	0	-----	-----	-----	0	23	0.0	

STATION = FRCF SATELLITE = STS-119 SUMMARY

		ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090317/162712	20090317/163842	0.002	0.015	52	100.0	-0.022	0.039	52	96.2	-0.080	7.033	52	100.0	-----	-----	-----	0 0.0 0
STATION = KMRF	SATELLITE = STS-119	RESIDUALS				VDNA NOISE				RATING							

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	-----	0.015	-----	52	1	0.0118	0.0118	0.0118	1	1	100.0	
ANGLE 2 (DEG)	-0.022	-----	0.039	-----	52	1	0.0195	0.0195	0.0195	1	1	96.2	
RANGE (M)	-0.080	-----	7.033	-----	52	1	4.3301	4.3301	4.3301	1	1	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	1	0.0	

STATION = KMRF SATELLITE = STS-119 SUMMARY

STATION = MIL3 SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090316/073300	20090316/074300	0.021	0.008	10	100.0	-0.008	0.006	14	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090316/090620	20090316/091420	0.012	0.009	7	100.0	0.007	0.005	7	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090316/233210	20090316/234300	0.010	0.026	25	96.0	-0.010	0.013	25	96.0	-----	-----	0	0.0	-----	0 0.0 1
20090317/072440	20090317/073430	0.010	0.017	14	100.0	-0.005	0.006	15	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090317/215200	20090317/221000	-0.021	0.020	17	76.5	-0.040	0.022	20	85.0	-----	-----	0	0.0	-----	0 0.0 1
20090317/233400	20090317/234520	-0.004	0.014	21	100.0	-0.033	0.016	31	83.9	-----	-----	0	0.0	-----	0 0.0 1
20090321/054910	20090321/055940	-0.003	0.016	19	100.0	-0.003	0.009	19	100.0	-----	-----	0	0.0	-----	0 100.0 1
20090321/072400	20090321/073310	0.007	0.000	1	100.0	-0.008	0.000	1	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090321/221230	20090321/222300	0.022	0.011	16	100.0	0.002	0.011	24	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090322/044000	20090322/045100	0.027	0.051	14	50.0 A	-0.010	0.022	17	94.1	-----	-----	0	0.0	-----	0 0.0 1 Anomaly
20090322/061500	20090322/062710	0.005	0.010	25	100.0	-0.006	0.009	35	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090322/210300	20090322/211540	0.002	0.020	40	100.0	-0.017	0.009	40	100.0	-----	-----	0	0.0	-----	0 0.0 1

STATION = MIL3 SATELLITE = STS-119

RESIDUALS				VDNA NOISE				RATING					
MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	0.005	0.028	0.021	0.026	209	12	0.0058	0.0263	0.0139	12	12	94.3	
ANGLE 2 (DEG)	-0.013	0.030	0.013	0.024	248	12	0.0023	0.0106	0.0071	12	12	96.0	
RANGE (M)	-----	-----	-----	-----	0	0	-----	-----	-----	0	12	0.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	12	100.0	

STATION = MIL3 SATELLITE = STS-119 SUMMARY

STATION = MILA SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	MEAN	SD	PTS	%USE A M ANOMALY C
20090318/060300	20090318/061140	0.019	0.016	12	100.0	-0.009	0.010	12	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090318/073700	20090318/074840	-0.005	0.012	26	100.0	0.000	0.008	26	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090318/222500	20090318/223730	0.016	0.017	41	100.0	-0.011	0.006	41	100.0	-----	-----	0	0.0	-----	0 0.0 1
20090319/000200	20090319/001210	-----	-----	0	0.0	-----	-----	0	0.0	-----	-----	0	0.0	-----	0 0.0 1
20090319/063120	20090319/063850	-0.004	0.022	35	97.1	-0.009	0.007	35	100.0	1.775	3.819	31	100.0	0.006	0.016 35 100.0 2

20090319/080500	20090319/081510	-0.062	0.017	9	33.3	A	0.010	0.002	9	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	Anomaly
20090319/211940	20090319/212900	-0.010	0.012	19	100.0		-0.002	0.012	28	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090319/225300	20090319/230410	0.019	0.008	19	100.0		-0.010	0.007	19	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090320/052110	20090320/053030	-0.007	0.012	18	100.0		-0.020	0.006	18	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090320/065600	20090320/070740	-0.036	0.012	21	90.5		-0.002	0.010	21	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090320/214410	20090320/215630	0.017	0.018	39	97.4		-0.003	0.010	39	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	
20090321/203600	20090321/204810	0.010	0.010	23	100.0		-0.006	0.011	32	100.0	-----	-----	0	0.0	-----	-----	0	0.0	1	

STATION = MILA SATELLITE = STS-119

RESIDUALS

VDNA NOISE

RATING

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.001	0.046	0.016	0.028	262	11	0.0055	0.0185	0.0093	11	12	96.2	
ANGLE 2 (DEG)	-0.006	0.014	0.009	0.013	280	11	0.0022	0.0119	0.0072	11	12	100.0	
RANGE (M)	1.775	-----	3.819	-----	31	1	1.3892	1.3892	1.3892	1	12	100.0	
RANGE-RATE (M/S)	0.006	-----	0.016	-----	35	1	0.0012	0.0012	0.0012	1	12	100.0	

STATION = MILA SATELLITE = STS-119 SUMMARY

STATION = WL2F SATELLITE = ISS

ANGLE 1 RESIDUALS (DEG)

ANGLE 2 RESIDUALS (DEG)

RANGE RESIDUALS (M)

RANGE-RATE RESIDUALS (M/S)

	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M	ANOMALY C	
20090314/234942	20090314/235954	0.005	0.010	61	100.0	0.009	0.009	61	100.0	10.487	12.620	61	100.0	-----	-----	0	0.0	0
20090315/012454	20090315/013718	0.000	0.015	60	100.0	-0.004	0.013	60	100.0	-3.406	10.030	60	100.0	-----	-----	0	0.0	0
20090315/030206	20090315/031242	0.003	0.018	13	100.0	-0.006	0.021	13	100.0	-10.562	17.840	13	100.0	-----	-----	0	0.0	0
20090315/061424	20090315/062618	-0.000	0.011	56	100.0	0.003	0.014	56	100.0	3.476	17.412	56	100.0	-----	-----	0	0.0	0
20090315/074936	20090315/080136	0.002	0.011	65	100.0	0.001	0.013	65	100.0	4.507	13.689	65	100.0	-----	-----	0	0.0	0
20090315/224206	20090315/225242	0.009	0.016	20	100.0	0.017	0.016	20	100.0	1.383	15.336	20	100.0	-----	-----	0	0.0	0
20090316/230824	20090316/231948	0.004	0.010	63	100.0	0.005	0.013	63	100.0	-3.008	11.670	63	100.0	-----	-----	0	0.0	0
20090317/004354	20090317/005512	0.003	0.012	60	100.0	-0.007	0.014	60	100.0	11.418	14.172	60	100.0	-----	-----	0	0.0	0
20090317/053324	20090317/054518	0.003	0.014	57	100.0	0.004	0.016	57	100.0	11.027	10.640	57	100.0	-----	-----	0	0.0	0
20090317/070824	20090317/072036	0.005	0.018	64	100.0	0.001	0.016	64	100.0	-4.904	13.268	64	100.0	-----	-----	0	0.0	0

STATION = WL2F SATELLITE = ISS

RESIDUALS

VDNA NOISE

RATING

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.003	0.005	0.013	0.014	519	10	0.0080	0.0226	0.0118	10	10	100.0	
ANGLE 2 (DEG)	0.002	0.013	0.014	0.016	519	10	0.0078	0.0221	0.0118	10	10	100.0	
RANGE (M)	3.128	15.760	13.310	15.781	519	10	9.4647	16.5704	11.4652	10	10	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	10	0.0	

STATION = WL2F SATELLITE = ISS SUMMARY

STATION = WL2F SATELLITE = STS-119

	ANGLE 1 RESIDUALS (DEG)	ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)							
		MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C
20090316/233342	20090316/234424	0.004	0.011	50	100.0	0.012	0.014	50	100.0	-0.159	6.687	50	100.0	-----	-----	0	0.0 0
20090317/010812	20090317/011718	0.004	0.012	32	100.0	-0.007	0.016	32	100.0	1.083	6.906	32	100.0	-----	-----	0	0.0 0
20090317/220100	20090317/221206	0.009	0.016	35	100.0	0.010	0.014	35	100.0	1.725	8.088	35	100.0	-----	-----	0	0.0 0
20090317/233524	20090317/234836	-0.001	0.010	68	100.0	-0.007	0.009	68	100.0	8.110	15.498	68	100.0	-----	-----	0	0.0 0
20090318/011206	20090318/012300	0.004	0.016	39	100.0	-0.009	0.015	39	100.0	4.719	15.558	39	100.0	-----	-----	0	0.0 0
20090318/042506	20090318/043642	0.000	0.016	41	100.0	-0.005	0.016	41	100.0	-0.602	10.682	41	100.0	-----	-----	0	0.0 0
20090318/060024	20090318/061224	-0.003	0.011	68	100.0	-0.007	0.014	68	100.0	3.131	16.975	68	100.0	-----	-----	0	0.0 0
20090318/073612	20090318/074706	0.007	0.021	25	100.0	-0.004	0.018	25	100.0	0.916	15.662	25	100.0	-----	-----	0	0.0 0
20090319/212000	20090319/213112	0.001	0.014	42	100.0	0.012	0.015	42	100.0	-0.764	12.949	42	100.0	-----	-----	0	0.0 0
20090319/225354	20090319/230654	-0.000	0.010	67	100.0	-0.002	0.013	67	100.0	3.776	14.435	67	100.0	-----	-----	0	0.0 0
20090320/003054	20090320/004142	0.003	0.021	33	100.0	0.000	0.021	33	100.0	2.250	13.221	33	100.0	-----	-----	0	0.0 0
20090320/034418	20090320/035518	-0.001	0.018	44	100.0	0.002	0.017	44	100.0	-11.729	16.097	44	100.0	-----	-----	0	0.0 0
20090320/051924	20090320/053142	0.001	0.013	63	100.0	-0.001	0.012	68	100.0	4.068	14.334	68	100.0	-----	-----	0	0.0 0
20090321/203800	20090321/205024	0.011	0.013	49	100.0	0.011	0.013	49	100.0	4.174	14.669	49	100.0	-----	-----	0	0.0 0
20090321/221306	20090321/222606	-0.001	0.010	65	100.0	-0.007	0.009	65	100.0	7.555	11.123	65	100.0	-----	-----	0	0.0 0
20090321/235012	20090322/000042	0.002	0.010	31	100.0	-0.009	0.010	31	100.0	-1.336	9.000	31	100.0	-----	-----	0	0.0 0
20090322/030306	20090322/031500	-0.000	0.015	47	100.0	-0.004	0.015	47	100.0	2.942	10.470	47	100.0	-----	-----	0	0.0 0
20090322/043806	20090322/052206	0.003	0.012	60	100.0	-0.010	0.015	66	100.0	8.303	9.099	66	100.0	-----	-----	0	0.0 0

STATION = WL2F SATELLITE = STS-119

	RESIDUALS				VDNA NOISE				RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	0.008	0.014	0.014	859	18	0.0026	0.0218	0.0108	18	18	100.0	
ANGLE 2 (DEG)	-0.002	0.016	0.014	0.016	870	18	0.0033	0.0226	0.0099	18	18	100.0	
RANGE (M)	2.793	9.682	12.963	14.117	870	18	2.9716	15.1569	8.3831	18	18	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	18	0.0	

STATION = WL2F SATELLITE = STS-119 SUMMARY

	ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)				
	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A	MEAN	SD	PTS	%USE A M ANOMALY C	
20090316/001624	20090316/002924	-0.000	0.005	66	100.0	0.005	0.005	69	100.0	2.886	13.354	69	100.0	-----	-----	0	0.0 0
20090316/015600	20090316/020412	-0.003	0.003	42	100.0	0.010	0.004	42	100.0	-5.968	12.674	42	97.6	-----	-----	0	0.0 0
20090316/050612	20090316/051736	-0.001	0.003	36	100.0	0.014	0.003	36	100.0	-4.332	10.425	36	100.0	-----	-----	0	0.0 0
20090316/064118	20090316/065412	0.001	0.006	67	100.0	0.010	0.003	67	100.0	1.735	16.194	67	98.5	-----	-----	0	0.0 0
20090316/081718	20090316/082848	-0.002	0.003	37	100.0	0.007	0.003	37	100.0	1.163	14.953	37	100.0	-----	-----	0	0.0 0

STATION = WLPQ SATELLITE = ISS

	RESIDUALS				VDNA NOISE				RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	-0.001	0.004	0.005	0.005	248	5	0.0021	0.0031	0.0026	5	5	100.0	

ANGLE 2 (DEG)	0.009	0.009	0.004	0.011	251	5	0.0013	0.0031	0.0021	5	5	100.0
RANGE (M)	-0.192	10.710	13.950	14.944	251	5	10.6116	13.9374	12.0236	5	5	99.2
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	5	0.0

STATION = WLPQ SATELLITE = ISS SUMMARY

STATION = WLPQ SATELLITE = STS-119

ANGLE 1 RESIDUALS (DEG)				ANGLE 2 RESIDUALS (DEG)				RANGE RESIDUALS (M)				RANGE-RATE RESIDUALS (M/S)			
	MEAN	SD	PTS %USE A		MEAN	SD	PTS %USE A		MEAN	SD	PTS %USE A		MEAN	SD	PTS %USE A M ANOMALY C
20090316/011818	20090316/012724	-0.002	0.002 24 100.0	0.010	0.004 24 100.0	-10.883	10.150 24 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090316/055836	20090316/060900	-0.001	0.004 39 100.0	0.010	0.003 39 100.0	-0.382	5.159 39 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090316/073118	20090316/074218	-0.000	0.003 48 100.0	0.004	0.003 48 100.0	-0.023	8.919 48 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090317/054942	20090317/060012	-0.001	0.004 46 100.0	0.011	0.003 46 100.0	-1.623	6.849 46 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090317/072300	20090317/073300	-0.002	0.004 41 100.0	0.003	0.002 41 100.0	-3.232	7.367 41 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090318/222700	20090318/224036	-0.000	0.003 66 100.0	0.005	0.004 66 100.0	7.969	25.323 66 89.4	-----	-----	-----	-----	-----	-----	0	0.0 0
20090319/000336	20090319/001524	-0.003	0.003 58 100.0	0.005	0.002 58 100.0	-13.768	16.231 58 98.3	-----	-----	-----	-----	-----	-----	0	0.0 0
20090319/031654	20090319/032730	-0.004	0.002 4 100.0	0.009	0.003 4 100.0	10.162	21.703 4 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090319/045218	20090319/050442	-0.003	0.004 60 100.0	0.006	0.003 60 100.0	3.335	11.611 60 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090319/062748	20090319/064012	-0.001	0.002 62 100.0	0.004	0.003 62 100.0	2.907	14.456 62 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090320/214612	20090320/215954	0.000	0.005 67 100.0	0.004	0.005 67 100.0	2.869	16.307 67 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090320/232206	20090320/233424	-0.003	0.003 55 100.0	0.006	0.003 55 100.0	-6.816	16.277 55 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090321/023554	20090321/024648	-0.003	0.004 16 100.0	0.007	0.003 16 100.0	3.450	13.191 16 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090321/041118	20090321/042354	-0.001	0.003 62 100.0	0.004	0.002 62 100.0	-4.755	13.160 62 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090321/054636	20090321/055918	-0.002	0.003 59 100.0	-0.000	0.002 59 100.0	-3.517	14.137 59 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090322/210518	20090322/211830	0.002	0.006 68 100.0	0.004	0.004 68 100.0	8.342	12.708 68 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0
20090322/224130	20090322/225412	-0.004	0.002 53 100.0	0.006	0.002 53 100.0	9.017	15.425 53 100.0	-----	-----	-----	-----	-----	-----	0	0.0 0

STATION = WLPQ SATELLITE = STS-119

RESIDUALS					VDNA NOISE					RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY	
ANGLE 1 (DEG)	-0.001	0.003	0.004	0.004	828	17	0.0008	0.0037	0.0017	17	17	100.0		
ANGLE 2 (DEG)	0.005	0.006	0.003	0.007	828	17	0.0008	0.0043	0.0014	17	17	100.0		
RANGE (M)	0.096	14.136	14.479	16.113	828	17	2.0693	29.2244	9.1241	17	17	99.0		
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	17	0.0		

STATION = WLPQ SATELLITE = STS-119 SUMMARY

COMBINED STATISTICS FOR EACH STATION

STATION = AGO3

SATELLITE = STS-119

RESIDUALS

	MEAN	DEV	SD	RSS	PTS	PASSES
ANGLE 1 (DEG)	0.024	0.051	0.023	0.042	349	13
ANGLE 2 (DEG)	-0.013	0.012	0.012	0.018	386	13
RANGE (M)	-----	-----	-----	-----	0	0
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0

COMBINED STATISTICS SUMMARY FOR AG03

VDNA NOISE

RATING

	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.0029	0.0231	0.0110	13	13	98.6	
ANGLE 2 (DEG)	0.0026	0.0152	0.0072	13	13	100.0	
RANGE (M)	-----	-----	-----	0	13	0.0	
RANGE-RATE (M/S)	-----	-----	-----	0	13	0.0	

STATION = ANTO

SATELLITE = ISS

SATELLITE = STS-119

RESIDUALS

	MEAN	DEV	SD	RSS	PTS	PASSES
ANGLE 1 (DEG)	0.003	0.006	0.003	0.005	192	4
ANGLE 2 (DEG)	-0.005	0.009	0.006	0.009	192	4
RANGE (M)	-1.211	8.575	13.259	13.988	192	4
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0

COMBINED STATISTICS SUMMARY FOR ANTO

VDNA NOISE

RATING

	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.0008	0.0014	0.0012	4	4	100.0	
ANGLE 2 (DEG)	0.0013	0.0057	0.0040	4	4	100.0	
RANGE (M)	2.5367	8.6083	5.7689	4	4	100.0	
RANGE-RATE (M/S)	-----	-----	-----	0	4	0.0	

STATION = ASCQ

SATELLITE = ISS

SATELLITE = STS-119

RESIDUALS

	MEAN	DEV	SD	RSS	PTS	PASSES
ANGLE 1 (DEG)	0.001	0.003	0.004	0.005	366	7
ANGLE 2 (DEG)	0.007	0.014	0.006	0.011	370	7
RANGE (M)	4.702	10.235	14.341	15.936	370	7
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0

COMBINED STATISTICS SUMMARY FOR ASCQ

VDNA NOISE

RATING

	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.0004	0.0037	0.0025	7	7	100.0	
ANGLE 2 (DEG)	0.0004	0.0043	0.0028	7	7	100.0	
RANGE (M)	5.1062	17.6598	12.9102	7	7	99.5	
RANGE-RATE (M/S)	-----	-----	-----	0	7	0.0	

STATION = EAFF

SATELLITE = ISS

SATELLITE = STS-119

RESIDUALS

	MEAN	DEV	SD	RSS	PTS	PASSES
ANGLE 1 (DEG)	0.001	0.003	0.004	0.005	366	7
ANGLE 2 (DEG)	0.007	0.014	0.006	0.011	370	7
RANGE (M)	4.702	10.235	14.341	15.936	370	7
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0

VDNA NOISE

RATING

	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.0004	0.0037	0.0025	7	7	100.0	
ANGLE 2 (DEG)	0.0004	0.0043	0.0028	7	7	100.0	
RANGE (M)	5.1062	17.6598	12.9102	7	7	99.5	
RANGE-RATE (M/S)	-----	-----	-----	0	7	0.0	

	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	0.010	0.009	0.010	632	13	0.0032	0.0137	0.0064	13	13	100.0	
ANGLE 2 (DEG)	-0.001	0.007	0.009	0.010	638	13	0.0029	0.0136	0.0053	13	13	100.0	
RANGE (M)	2.316	12.786	20.620	21.712	637	13	4.8630	19.2360	14.1400	13	13	96.7	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	13	0.0	

COMBINED STATISTICS SUMMARY FOR EAFF

SATION = FRCF
 SATELLITE = ISS
 SATELLITE = STS-119

	RESIDUALS				VDNA NOISE				RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	-0.004	0.009	0.008	0.010	1425	29	0.0020	0.0115	0.0052	29	30	99.0	
ANGLE 2 (DEG)	0.001	0.013	0.012	0.014	1442	29	0.0030	0.0142	0.0074	29	30	98.8	
RANGE (M)	3.332	9.101	18.698	19.530	1441	29	3.5909	23.6165	13.0735	29	30	97.3	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	30	0.0	

COMBINED STATISTICS SUMMARY FOR FRCF

SATION = KMRF
 SATELLITE = STS-119

	RESIDUALS				VDNA NOISE				RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	-----	0.015	-----	52	1	0.0118	0.0118	0.0118	1	1	100.0	
ANGLE 2 (DEG)	-0.022	-----	0.039	-----	52	1	0.0195	0.0195	0.0195	1	1	96.2	
RANGE (M)	-0.080	-----	7.033	-----	52	1	4.3301	4.3301	4.3301	1	1	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	1	0.0	

COMBINED STATISTICS SUMMARY FOR KMRF

SATION = MIL3
 SATELLITE = STS-119

	RESIDUALS				VDNA NOISE				RATING				
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.005	0.028	0.021	0.026	209	12	0.0058	0.0263	0.0139	12	12	94.3	
ANGLE 2 (DEG)	-0.013	0.030	0.013	0.024	248	12	0.0023	0.0106	0.0071	12	12	96.0	
RANGE (M)	-----	-----	-----	-----	0	0	-----	-----	-----	0	12	0.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	12	100.0	

COMBINED STATISTICS SUMMARY FOR MIL3

STATION = MILA
 SATELLITE = STS-119

	RESIDUALS					VDNA NOISE					RATING		
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.001	0.046	0.016	0.028	262	11	0.0055	0.0185	0.0093	11	12	96.2	
ANGLE 2 (DEG)	-0.006	0.014	0.009	0.013	280	11	0.0022	0.0119	0.0072	11	12	100.0	
RANGE (M)	1.775	-----	3.819	-----	31	1	1.3892	1.3892	1.3892	1	12	100.0	
RANGE-RATE (M/S)	0.006	-----	0.016	-----	35	1	0.0012	0.0012	0.0012	1	12	100.0	
COMBINED STATISTICS SUMMARY FOR MILA													

STATION = WL2F
 SATELLITE = ISS
 SATELLITE = STS-119

	RESIDUALS					VDNA NOISE					RATING		
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	0.002	0.007	0.013	0.014	1378	28	0.0026	0.0226	0.0112	28	28	100.0	
ANGLE 2 (DEG)	-0.000	0.015	0.014	0.016	1389	28	0.0033	0.0226	0.0107	28	28	100.0	
RANGE (M)	2.918	11.215	13.094	14.540	1389	28	2.9716	16.5704	9.7468	28	28	100.0	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	28	0.0	
COMBINED STATISTICS SUMMARY FOR WL2F													

STATION = WLPQ
 SATELLITE = ISS
 SATELLITE = STS-119

	RESIDUALS					VDNA NOISE					RATING		
	MEAN	DEV	SD	RSS	PTS	PASSES	MIN	MAX	RMS	PASSES	TOTALPASSES	%USE	ANOMALY
ANGLE 1 (DEG)	-0.001	0.003	0.004	0.004	1076	22	0.0008	0.0037	0.0020	22	22	100.0	
ANGLE 2 (DEG)	0.006	0.007	0.003	0.008	1079	22	0.0008	0.0043	0.0016	22	22	100.0	
RANGE (M)	0.029	12.577	14.358	15.675	1079	22	2.0693	29.2244	9.9531	22	22	99.1	
RANGE-RATE (M/S)	-----	-----	-----	-----	0	0	-----	-----	-----	0	22	0.0	
COMBINED STATISTICS SUMMARY FOR WLPQ													

11. SN EVENT SUMMARY REPORT

The SN Event Summary Report provides a detailed summary of the tracking data quality of each SN tracking data event for STS. This report gives a chronological listing of all STS SN events summarized by Tracking Data Relay Satellite (TDRS) used for each event. The start and stop time, as well as other information pertaining to data quality such as the number of invalid, anomalous, and usable frames of tracking data, are listed for each event. Each event is rated as either a success or a failure. Comments are included for significant anomalous tracking data or for events having more than 30% invalid tracking data. This report also includes a statistical summary regarding the overall tracking data quality for all events for each TDRS used for STS support. This report is generated after the launch of STS.

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TEAS  
TEAS  
TEAS  
TEAS TRACKING EVALUATION AUTOMATION SOFTWARE (TEAS)  
TEAS ALLIED SIGNAL TECHNICAL SERVICES CORPORATION  
TEAS TRACKING SUPPORT SERVICES (TSS)  
TEAS GODDARD SPACE FLIGHT CENTER  
TEAS BUILDING 28, ROOM N230  
TEAS GARY W. WILLIAMSON  
TEAS (301) 286-1323 PHONE  
TEAS  
TEAS  
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1 #####  
# Daily Statistics Start: 20090321/225928 GMT #  
# Daily Statistics End: 20090322/232850 GMT #  
# Mission Statistics Start: 20090314/000000 GMT #  
# Mission Statistics End: 20090322/232850 GMT #  
# Report Generated on: 20090323/012147 GMT #  
# Report Generated by: Mike Blizzard (301) 286-1334 #  
#####  
1 STS-119 TDRS- 3 EVENT TRACKING SUMMARY LOG  
REPORT GENERATION TIME: 20090323/012147 GMT  
  
S  
EVT ORBIT TDRS- 3 AOS LOS D E G D O P P L E R GSTDN MODE NOISE  
NUM NUMBER MMDD/HHMMSS HHMMSS C RET Q L PRED INV ANM USE DCE NL TOT DCE NL MIL USE  
PTS HZ % F COMMENTS  
2 1 0316/000345 003625 10 SSA1 A 3 197 90 2 105 192 65 0 0 0 11 53 F 46% invalid Doppler, no lock = 33%  
5 2 0316/015606 020746 10 SSA1 A 3 71 6 0 65 71 1 0 0 0 9 92  
8 3 0316/031024 033934 10 SSA1 A 3 170 4 0 166 170 1 0 0 0 9 98  
24 11 0316/143922 144902 10 SSA2 A 3 59 6 0 53 58 2 0 0 0 7 90
```

27	11,12	0316/155354	163034	10	SSA1	A	3	221	2	0	219	221	0	0	0	0	11	99	
34	15	0316/204852	210802	10	SSA1	A	3	116	45	18	53	113	20	0	0	0	6	46	F 39% invalid Doppler, no lock = 17%
38	16	0316/222239	224639	10	SSA1	A	3	145	13	18	114	143	6	0	0	0	8	79	
59	25,26	0317/123547	131507	10	SSA1	A	3	237	17	0	220	235	4	0	0	0	8	93	
62	27	0317/143808	144118	10	SSA1	A	3	20	3	0	17	19	1	0	0	0	7	85	
65	27,28	0317/154658	161518	10	SSA1	A	3	171	0	0	171	171	0	0	0	0	8	100	
68	29	0317/174429	175039	10	SSA1	A	3	38	2	0	36	38	1	0	0	0	5	95	
71	30	0317/192057	192757	10	SSA1	A	3	43	2	0	41	43	0	0	0	0	7	95	
75	31	0317/205714	210724	10	SSA1	A	3	62	4	2	56	61	1	0	0	0	7	90	
78	32	0317/222611	225951	10	SSA1	A	3	204	5	2	197	204	0	0	0	0	5	97	
81	33	0318/001431	002621	10	SSA1	A	3	72	2	0	70	72	0	0	0	0	5	97	
99	40,41	0318/113930	120300	10	SSA1	A	3	142	2	0	140	142	0	0	0	0	7	99	
104	43	0318/145825	150515	10	SSA1	A	3	42	0	0	42	42	0	0	0	0	8	100	
107	44	0318/163534	163904	10	SSA1	A	3	22	0	0	22	22	0	0	0	0	7	100	
110	45	0318/181523	181803	10	SSA1	A	3	17	0	0	17	17	17	0	0	0	0	100	
113	46	0318/194811	201651	10	SSA1	A	3	173	2	0	171	172	1	0	0	0	8	99	
116	47	0318/212520	215300	10	SSA1	A	3	168	6	3	159	168	1	0	0	0	7	95	
119	48	0318/230029	232629	10	SSA1	A	3	157	2	0	155	157	0	0	0	0	6	99	
122	49	0319/004951	010201	10	SSA1	A	3	74	2	0	72	74	1	0	0	0	8	97	
125	50	0319/022246	024346	10	SSA1	A	3	127	8	3	116	127	0	0	0	0	8	91	
129	51	0319/035950	042440	10	SSA1	A	3	151	0	0	151	151	0	0	0	0	7	100	
132	52,53	0319/053528	060248	10	SSA1	A	3	165	7	0	158	165	0	0	0	0	4	96	
135	53,54	0319/071054	074104	10	SSA1	A	3	182	0	0	182	182	0	0	0	0	6	100	
138	54,55	0319/085058	091738	10	SSA1	A	3	161	2	0	159	160	1	0	0	0	8	99	
141	55,56	0319/102923	103903	10	SSA1	A	3	59	11	4	44	58	3	0	0	0	7	75	
144	57	0319/120657	121937	10	SSA1	A	3	77	6	0	71	76	1	0	0	0	9	92	
151	60	0319/170309	170859	10	SSA1	A	3	36	6	0	30	35	2	0	0	0	4	83	
154	61	0319/183921	184651	10	SSA1	A	3	46	2	0	44	46	1	0	0	0	8	96	
157	62	0319/201602	204452	10	SSA1	A	3	174	3	0	171	173	1	0	0	0	4	98	
160	63	0319/215411	222051	10	SSA1	A	3	162	11	3	148	160	3	0	0	0	4	91	
163	64	0319/233347	235757	10	SSA1	A	3	146	2	0	144	146	0	0	0	0	5	99	
166	65	0320/012519	012959	10	SSA1	A	3	29	0	0	29	29	0	0	0	0	4	100	
173	68,69	0320/060220	063130	10	SSA1	A	3	176	0	0	176	176	0	0	0	0	4	100	
176	69,70	0320/073802	080832	10	SSA1	A	3	184	6	0	178	183	1	0	0	0	4	97	
179	70,71	0320/091711	093951	10	SSA1	A	3	137	14	6	117	134	4	0	0	0	4	85	
182	71,72	0320/105520	110740	10	SSA1	A	3	75	2	9	64	75	0	0	0	0	5	85	
187	74	0320/141732	142342	10	SSA1	A	3	38	4	7	27	38	0	0	0	0	7	71	
190	75	0320/155429	155959	10	SSA1	A	3	34	23	7	4	33	7	0	0	0	0	12	F 68% invalid Doppler, no lock = 21%
193	76	0320/172911	174451	10	SSA1	A	3	95	45	7	43	90	22	0	0	0	5	45	F 47% invalid Doppler, no lock = 23%
196	77	0320/190706	191626	10	SSA1	A	3	57	1	0	56	57	0	0	0	0	6	98	
199	78	0320/204921	211251	10	SSA1	A	3	142	11	2	129	141	1	0	0	0	4	91	
202	79	0320/223111	224851	10	SSA1	A	3	107	2	0	105	107	1	0	0	0	3	98	
205	80	0321/001512	002552	10	SSA1	A	3	65	2	0	63	65	1	0	0	0	3	97	
208	81	0321/015153	020133	10	SSA1	A	3	59	5	0	54	59	1	0	0	0	5	92	
211	82,83	0321/031814	035324	10	SSA1	A	3	212	1	0	211	212	0	0	0	0	4	100	
214	83,84	0321/045349	052129	10	SSA1	A	3	167	1	0	166	167	0	0	0	0	4	99	
217	84,85	0321/063246	065926	10	SSA1	A	3	161	4	0	157	159	2	0	0	0	4	98	
220	85,86	0321/080532	083602	10	SSA1	A	3	184	0	0	184	184	0	0	0	0	3	100	

223	86,87	0321/094414	095724	10	SSA1	A	3	80	8	10	62	79	3	0	0	0	0	3	78
226	88	0321/112548	113528	10	SSA1	A	3	59	3	0	56	59	0	0	0	0	0	4	95
233	91	0321/162201	162751	10	SSA1	A	3	36	0	0	36	36	0	0	0	0	0	5	100
236	92	0321/175813	180553	10	SSA1	A	3	47	3	0	44	47	1	0	0	0	0	3	94
239	93	0321/193502	195652	10	SSA1	A	3	132	12	2	118	131	4	0	0	0	0	3	89
242	94	0321/211318	214058	10	SSA1	A	3	167	0	0	167	167	0	0	0	0	0	4	100
245	95	0321/225317	231657	10	SSA1	A	3	143	2	0	141	143	0	0	0	0	0	4	99
254	99,100	0322/052037	054537	10	SSA1	A	3	151	9	0	142	151	2	0	0	0	0	6	94
257	100,101	0322/065622	072652	10	SSA1	A	3	184	1	0	183	184	0	0	0	0	0	3	99
259	101,102	0322/083336	085646	10	SSA1	A	3	141	10	9	122	139	2	0	0	0	0	4	87
262	102,103	0322/101405	102605	10	SSA1	A	3	73	3	2	68	73	1	0	0	0	0	5	93
276	109	0322/202204	202834	10	SSA1	A	3	40	2	0	38	40	1	0	0	0	0	5	95

1

STS-119 TDRS- 4 EVENT TRACKING SUMMARY LOG
REPORT GENERATION TIME: 20090323/012147 GMT

EVT NUM	ORBIT NUMBER	S												GSTDN	MODE	NOISE	COMMENTS				
		D	E	G	D	O	P	P	L	E	R	INV	ANM	USE	DCE	NL	TOT	DCE	NL	MIL	USE
MMDD	HHMMSS	I	SERV	P	T	PTS	PTS	PTS	PTS	PTS	HZ	%	F								
1	1	0315/234355	001855	10	SSA2	B	1	211	52	0	159	202	36	0	0	0	0	25	75		
4	2	0316/012447	015507	10	SSA2	B	1	183	2	1	180	182	1	0	0	0	0	4	98		
7	3	0316/023957	030947	10	SSA2	B	1	180	3	0	177	180	1	0	0	0	0	8	98		
10	4	0316/043202	050632	10	SSA2	B	1	208	5	1	202	206	2	0	0	0	0	3	97		
14	6	0316/074135	081435	10	SSA2	B	1	199	25	17	157	197	9	0	0	0	0	4	79		
16	7	0316/091837	094857	10	SSA2	B	1	183	18	11	154	181	5	0	0	0	0	3	84		
18	8	0316/105602	112412	10	SSA2	B	1	170	6	2	162	169	1	0	0	0	0	3	95		
20	9	0316/123201	130121	10	SSA2	B	1	177	9	5	163	177	0	0	0	0	0	3	92		
23	10,11	0316/140556	143846	10	SSA2	B	1	198	5	0	193	197	1	0	0	0	0	5	97		
26	11	0316/154025	155315	10	SSA2	B	1	78	7	0	71	78	2	0	0	0	0	0	91		
29	12,13	0316/171401	174931	10	SSA2	B	1	214	10	8	196	213	4	0	0	0	0	5	92		
31	13,14	0316/183308	192318	10	SSA2	B	1	302	3	0	299	302	0	0	0	0	0	3	99		
33	14,15	0316/202003	204813	10	SSA2	B	1	170	3	0	167	169	1	0	0	0	0	3	98		
37	16	0316/220216	222206	10	SSA2	B	1	120	0	0	120	120	0	0	0	0	0	4	100		
41	17	0316/233940	000830	10	SSA2	B	1	174	6	0	168	173	3	0	0	0	0	5	97		
43	17,18	0317/005240	014600	10	SSA2	B	1	321	5	1	315	321	1	0	0	0	0	4	98		
45	19	0317/023019	032249	10	SSA2	B	1	316	7	5	304	316	0	0	0	0	0	4	96		
47	20	0317/040700	045810	10	SSA2	B	1	308	12	3	293	308	3	0	0	0	0	4	95		
49	21	0317/055800	063220	10	SSA2	B	1	207	4	0	203	206	2	0	0	0	0	2	98		
51	22	0317/071621	080621	10	SSA2	B	1	301	64	56	181	297	25	0	0	0	3	60	F	21% invalid Doppler, no lock = 8%	
54	23	0317/091001	094101	10	SSA2	B	1	187	25	10	152	186	3	0	0	0	0	3	81		
56	24	0317/104834	111004	10	SSA2	B	1	130	10	0	120	130	1	0	0	0	0	5	92		
58	25	0317/122428	123508	10	SSA2	B	1	65	2	0	63	65	0	0	0	0	0	7	97		
61	26	0317/135840	141000	10	SSA2	B	1	69	15	5	49	68	1	0	0	0	0	5	71		
64	27	0317/151549	154619	10	SSA2	B	1	184	4	0	180	184	1	0	0	0	0	4	98		
67	28,29	0317/170847	174357	10	SSA2	B	1	212	8	24	180	212	0	0	0	0	0	5	85		
70	29,30	0317/184630	192010	10	SSA2	B	1	203	47	22	134	201	22	0	0	0	4	66	F	23% invalid Doppler, no lock = 11%	
74	30,31	0317/200329	205639	10	SSA2	B	1	320	12	3	305	319	1	0	0	0	0	9	95		

77 32	0317/220550	222540	10	SSA2	B	1	120	2	0	118	120	1	0	0	0	3	98
80 33	0317/234436	001356	10	SSA2	B	1	177	27	3	147	175	4	0	0	0	3	83
83 34	0318/011909	015359	10	SSA2	B	1	210	38	2	170	207	12	0	0	0	4	81
85 35	0318/025719	033159	10	SSA2	B	1	209	0	0	209	209	0	0	0	0	3	100
87 36	0318/041556	050936	10	SSA2	B	1	323	36	4	283	320	16	0	0	0	3	88
89 37	0318/055257	064547	10	SSA2	B	1	318	25	18	275	316	8	0	0	0	3	86
91 38	0318/072914	082214	10	SSA2	B	1	319	16	23	280	318	3	0	0	0	3	88
95 39	0318/091113	095943	10	SSA2	B	1	292	4	0	288	292	0	0	0	0	3	99
98 40	0318/110935	113855	10	SSA2	B	1	177	0	0	177	177	0	0	0	0	2	100
101 41,42	0318/123911	131901	10	SSA2	B	1	240	2	4	234	240	0	0	0	0	2	98
103 42,43	0318/142300	145750	10	SSA2	B	1	210	1	0	209	210	0	0	0	0	3	100
106 43,44	0318/155111	163501	10	SSA2	B	1	264	0	0	264	264	0	0	0	0	2	100
109 44,45	0318/172741	181121	10	SSA2	B	1	263	0	0	263	263	0	0	0	0	3	100
112 45,46	0318/190141	194731	10	SSA2	B	1	276	11	11	254	274	2	0	0	0	3	92
115 46,47	0318/204431	212441	10	SSA2	B	1	242	7	0	235	241	1	0	0	0	3	97
118 48	0318/223446	225956	10	SSA2	B	1	152	3	0	149	150	2	0	0	0	3	98
121 49	0319/001016	004336	10	SSA2	B	1	201	4	0	197	200	1	0	0	0	3	98
124 50	0319/014836	022206	10	SSA2	B	1	202	0	0	202	202	0	0	0	0	2	100
127 51	0319/033541	034151	10	SSA1	A	1	38	1	0	37	37	1	0	0	0	2	97
128 51	0319/034731	035911	10	SSA2	B	1	71	0	0	71	71	0	0	0	0	2	100
131 52	0319/050142	053452	10	SSA2	B	1	200	4	8	188	200	1	0	0	0	3	94
134 53	0319/064008	071018	10	SSA2	B	1	182	4	1	177	182	2	0	0	0	3	97
137 54	0319/081311	085021	10	SSA2	B	1	224	0	0	224	224	0	0	0	0	3	100
140 55	0319/095958	102848	10	SSA2	B	1	174	3	1	170	174	0	0	0	0	2	98
143 56,57	0319/113746	120626	10	SSA2	B	1	173	5	0	168	172	2	0	0	0	2	97
146 57,58	0319/131417	134807	10	SSA2	B	1	204	1	0	203	204	0	0	0	0	4	100
148 58,59	0319/145029	152559	10	SSA2	B	1	214	5	0	209	214	2	0	0	0	3	98
150 59,60	0319/162710	170230	10	SSA2	B	1	213	0	0	213	213	0	0	0	0	4	100
153 60,61	0319/180514	183844	10	SSA2	B	1	202	7	16	179	202	0	0	0	0	3	89
156 61,62	0319/193831	201531	10	SSA2	B	1	223	7	3	213	223	0	0	0	0	4	96
159 63	0319/212500	215340	10	SSA2	B	1	173	5	3	165	173	0	0	0	0	4	95
162 64	0319/230309	233309	10	SSA2	B	1	181	2	0	179	181	0	0	0	0	4	99
165 65	0320/003949	011319	10	SSA2	B	1	202	11	12	179	200	3	0	0	0	3	89
168 66	0320/021608	025138	10	SSA2	B	1	214	1	3	210	214	0	0	0	0	4	98
170 67	0320/035237	042817	10	SSA2	B	1	215	8	0	207	213	3	0	0	0	5	96
172 68	0320/053018	060148	10	SSA2	B	1	190	16	11	163	189	4	0	0	0	5	86
175 69	0320/064801	073731	10	SSA2	B	1	298	19	15	264	298	4	0	0	0	5	89
178 70	0320/085004	091634	10	SSA2	B	1	160	2	0	158	159	1	0	0	0	6	99
181 71	0320/102843	105443	10	SSA2	B	1	157	6	0	151	157	3	0	0	0	6	96
184 72,73	0320/120539	123759	10	SSA2	B	1	195	4	0	191	195	1	0	0	0	5	98
186 73,74	0320/134152	141652	10	SSA2	B	1	211	5	0	206	211	1	0	0	0	5	98
189 74,75	0320/150007	155357	10	SSA2	B	1	324	6	1	317	324	1	0	0	0	5	98
192 75,76	0320/165536	172836	10	SSA2	B	1	199	19	117	63	197	8	0	0	0	6	32 F 9% invalid Doppler, no lock = 4%. Doppler Drift.
195 76,77	0320/182811	190631	10	SSA2	B	1	231	7	8	216	230	1	0	0	0	5	94
198 77,78	0320/200711	204351	10	SSA2	B	1	221	0	1	220	221	0	0	0	0	4	100
201 79	0320/215401	222251	10	SSA2	B	1	174	2	0	172	173	1	0	0	0	4	99
204 80	0320/233112	000312	10	SSA2	B	1	193	6	5	182	192	3	0	0	0	3	94

207	81	0321/010727	014217	10	SSA2	B	1	210	5	0	205	210	2	0	0	0	3	98
210	82	0321/023531	031741	10	SSA2	B	1	254	2	0	252	254	1	0	0	0	4	99
213	83	0321/042042	045312	10	SSA2	B	1	196	13	8	175	195	3	0	0	0	3	89
216	84	0321/055411	063211	10	SSA2	B	1	229	30	6	193	227	12	0	0	0	4	84
219	85	0321/071531	080501	10	SSA2	B	1	298	18	15	265	298	11	0	0	0	3	89
222	86	0321/091914	094334	10	SSA2	B	1	147	5	0	142	147	1	0	0	0	4	97
225	87,88	0321/105647	112517	10	SSA2	B	1	172	0	0	172	172	0	0	0	0	4	100
228	88,89	0321/123310	130730	10	SSA2	B	1	207	4	0	203	207	0	0	0	0	5	98
230	89,90	0321/140921	144311	10	SSA2	B	1	204	5	1	198	204	3	0	0	0	4	97
232	90,91	0321/154610	162130	10	SSA2	B	1	213	9	1	203	213	1	0	0	0	4	95
235	91,92	0321/172430	175740	10	SSA2	B	1	200	9	16	175	199	1	0	0	0	11	88
238	92,93	0321/185711	193431	10	SSA2	B	1	225	1	1	223	225	0	0	0	0	5	99
241	93,94	0321/203411	211241	10	SSA2	B	1	232	1	0	231	232	1	0	0	0	5	100
244	95	0321/222218	225238	10	SSA2	B	1	183	0	1	182	183	0	0	0	0	4	99
247	96	0321/235011	003231	10	SSA2	B	1	255	1	3	251	255	0	0	0	0	3	98
249	97	0322/013456	021036	10	SSA2	B	1	215	4	1	210	215	1	0	0	0	3	98
251	98	0322/025353	034713	10	SSA2	B	1	321	24	4	293	320	15	0	0	0	3	91
253	99	0322/043035	052005	10	SSA2	B	1	298	22	20	256	297	9	0	0	0	3	86
256	100	0322/060646	065546	10	SSA2	B	1	295	25	11	259	292	11	0	0	0	3	88
258	101	0322/074319	083259	10	SSA2	B	1	299	18	16	265	299	6	0	0	0	3	89
261	102	0322/094750	101330	10	SSA2	B	1	155	3	0	152	155	1	0	0	0	5	98
264	103,104	0322/112435	115745	10	SSA2	B	1	200	5	1	194	199	2	0	0	0	6	97
266	104,105	0322/130043	133603	10	SSA2	B	1	213	8	3	202	212	2	0	0	0	4	95
268	105,106	0322/142839	151249	10	SSA2	B	1	266	0	0	266	266	0	0	0	0	4	100
270	106,107	0322/160431	164541	10	SSA2	B	1	248	0	0	248	248	0	0	0	0	5	100
272	107,108	0322/174231	182521	10	SSA2	B	1	258	3	12	243	258	0	0	0	0	7	94
274	108,109	0322/192311	200251	10	SSA2	B	1	239	2	0	237	239	0	0	0	0	6	99
278	110	0322/210311	214221	10	SSA2	B	1	236	62	17	157	228	31	0	0	0	5	67 F 26% invalid Doppler, no lock = 13%
280	111	0322/225013	232233	10	SSA2	B	1	195	62	16	117	192	37	0	0	0	6	60 F 32% invalid Doppler, no lock = 19%

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STS-119 TDRS- 5 EVENT TRACKING SUMMARY LOG
REPORT GENERATION TIME: 20090323/012147 GMT

EVT	ORBIT	S										GSTDN MODE NOISE										COMMENTS		
		D	E	G	D	O	P	P	L	E	R	INV	ANM	USE	DCE	NL	TOT	DCE	NL	MIL	USE	HZ	%	F
NUM	NUMBER	MMDD	HHMMSS	HHMMSS	I	SERV	P	T	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	Hz	%	F
3	1,2	0316	003430	012410	10	SSA2	B	2	299	6	0	293	299	0	0	0	0	0	0	0	0	6	98	
6	2,3	0316	020828	023918	10	SSA2	B	2	186	27	19	140	183	7	0	0	0	0	0	0	0	7	75	
9	3,4	0316	034105	043015	10	SSA2	B	2	296	41	28	227	292	28	0	0	0	0	0	0	0	4	77	
11	4,5	0316	051450	060540	10	SSA2	B	2	306	18	8	280	305	5	0	0	0	0	0	0	0	3	92	
13	5,6	0316	064906	073616	10	SSA2	B	2	284	3	3	278	283	1	0	0	0	0	0	0	0	3	98	
15	6,7	0316	082442	091612	10	SSA2	B	2	310	2	0	308	310	0	0	0	0	0	0	0	0	5	99	
17	7,8	0316	100159	105529	10	SSA2	B	2	322	0	3	319	322	0	0	0	0	0	0	0	0	4	99	
19	9	0316	113921	123121	10	SSA2	B	2	313	4	2	307	313	1	0	0	0	0	0	0	0	4	98	
21	10	0316	131513	133823	10	SSA2	B	2	140	3	1	136	139	1	0	0	0	0	0	0	0	4	97	
25	11	0316	144936	153946	10	SSA2	B	2	302	31	12	259	298	15	0	0	0	0	0	0	0	0	86	
28	12	0316	163109	171329	10	SSA2	B	2	255	7	16	232	254	1	0	0	0	0	0	0	5	91		

30	13	0316/175731	183231	10	SSA2	B	2	211	12	24	175	208	4	0	0	0	0	5	83
32	14	0316/193240	201930	10	SSA2	B	2	282	2	0	280	282	0	0	0	0	0	2	99
35	15	0316/210930	213710	10	SSA2	B	2	167	3	2	162	167	0	0	0	0	0	3	97
39	16	0316/224710	231450	10	SSA2	B	2	167	2	0	165	166	1	0	0	0	0	2	99
42	17	0317/002333	005203	10	SSA2	B	2	172	3	2	167	172	0	0	0	0	0	2	97
44	18,19	0317/015823	022943	10	SSA2	B	2	189	38	15	136	185	12	0	0	0	0	7	72
46	19,20	0317/033221	040621	10	SSA2	B	2	205	27	5	173	203	14	0	0	0	0	4	84
48	20,21	0317/050616	055726	10	SSA2	B	2	308	10	0	298	307	4	0	0	0	0	4	97
50	21,22	0317/064051	071541	10	SSA2	B	2	210	2	0	208	210	0	0	0	0	0	4	99
52	22,23	0317/082119	085329	10	SSA2	B	2	194	2	0	192	194	1	0	0	0	0	4	99
55	24	0317/095639	104759	10	SSA2	B	2	309	5	1	303	309	0	0	0	0	0	3	98
57	25	0317/113431	122341	10	SSA2	B	2	296	0	0	296	295	1	0	0	0	0	4	100
60	26	0317/131539	135809	10	SSA2	B	2	256	7	1	248	254	3	0	0	0	0	4	97
63	27	0317/144154	151514	10	SSA2	B	2	201	4	0	197	201	0	0	0	0	0	5	98
66	28	0317/161551	170801	10	SSA2	B	2	314	22	4	288	311	5	0	0	0	0	7	92
69	29	0317/175110	184540	10	SSA2	B	2	328	8	1	319	328	3	0	0	0	0	5	97
72	30	0317/192829	200029	10	SSA2	B	2	193	3	0	190	193	0	0	0	0	0	3	98
73	30	0317/200106	200256	10	SSA1	A	2	12	2	0	10	12	0	0	0	0	0	4	83
76	31,32	0317/210820	220510	10	SSA2	B	2	342	105	17	220	335	41	0	0	0	0	8	64 F 31% invalid Doppler, no lock = 12%
79	32,33	0317/230031	234341	10	SSA2	B	2	260	8	0	252	258	3	0	0	0	0	3	97
82	33,34	0318/003555	011835	10	SSA2	B	2	257	3	0	254	257	0	0	0	0	0	3	99
84	34,35	0318/020330	025640	10	SSA2	B	2	320	21	12	287	318	13	0	0	0	0	2	90
86	35,36	0318/033944	041524	10	SSA2	B	2	215	30	9	176	214	14	0	0	0	0	3	82
88	36,37	0318/051606	055226	10	SSA2	B	2	219	26	8	185	217	16	0	0	0	0	3	84
90	37,38	0318/065331	072841	10	SSA2	B	2	212	49	16	147	209	35	0	0	0	0	3	69 F 23% invalid Doppler, no lock = 17%
92	38,39	0318/083248	084828	10	SSA1	A	2	95	83	9	3	89	59	0	0	0	0	3	F 87% invalid Doppler, no lock = 62%
93	39	0318/084902	090452	10	SSA2	B	2	96	17	5	74	96	6	0	0	0	0	3	77
96	40	0318/101303	102613	10	SSA1	A	2	80	41	17	22	76	21	0	0	0	0	10	28 F 51% invalid Doppler, no lock = 26%
97	40	0318/102650	110900	10	SSA2	B	2	254	3	0	251	253	1	0	0	0	0	3	99
100	41	0318/120331	123831	10	SSA2	B	2	211	2	0	209	211	0	0	0	0	0	3	99
102	42	0318/132910	142220	10	SSA2	B	2	320	20	11	289	315	9	0	0	0	0	3	90
105	43	0318/150548	155038	10	SSA2	B	2	270	19	10	241	268	11	0	0	0	0	3	89
108	44	0318/164144	172704	10	SSA2	B	2	273	16	19	238	273	5	0	0	0	0	2	87
111	45	0318/181850	190110	10	SSA2	B	2	255	41	5	209	253	21	0	0	0	0	2	82
114	46	0318/201731	204351	10	SSA2	B	2	159	1	0	158	159	0	0	0	0	0	3	99
117	47,48	0318/215331	223411	10	SSA2	B	2	245	10	2	233	244	3	0	0	0	0	3	95
120	48,49	0318/232707	000937	10	SSA2	B	2	256	6	0	250	256	1	0	0	0	0	3	98
123	49,50	0319/010237	014757	10	SSA2	B	2	273	3	0	270	272	1	0	0	0	0	3	99
126	50,51	0319/024417	032417	10	SSA2	B	2	241	10	5	226	240	2	0	0	0	0	3	94
130	51,52	0319/042511	050111	10	SSA2	B	2	217	7	0	210	215	3	0	0	0	0	3	97
133	53	0319/060321	063931	10	SSA2	B	2	218	49	2	167	213	25	45	40	24	3	97	
136	54	0319/074135	081235	10	SSA2	B	2	187	60	0	127	175	26	0	0	0	0	2	68 F 32% invalid Doppler, no lock = 14%
139	55	0319/091817	095927	10	SSA2	B	2	248	61	4	183	232	45	0	0	0	0	3	74
142	56	0319/104226	113706	10	SSA2	B	2	329	28	6	295	328	22	0	0	0	0	3	90
145	57	0319/122010	131340	10	SSA2	B	2	322	20	6	296	322	9	0	0	0	0	3	92
147	58	0319/135645	144955	10	SSA2	B	2	320	26	9	285	318	7	0	0	0	0	3	89
149	59	0319/153255	162635	10	SSA2	B	2	323	15	16	292	322	7	0	0	0	0	3	90
152	60	0319/170931	180441	10	SSA2	B	2	332	26	9	297	330	13	0	0	0	0	3	89

155	61	0319/184729	193759	10	SSA2	B	2	304	48	13	243	303	21	0	0	0	3	80
158	62,63	0319/204531	212421	10	SSA2	B	2	234	0	0	234	234	0	0	0	0	5	100
161	63,64	0319/222131	225951	10	SSA2	B	2	231	3	0	228	231	2	0	0	0	3	99
164	64,65	0319/235831	003911	10	SSA2	B	2	245	4	0	241	245	1	0	0	0	3	98
167	65,66	0320/013032	021532	10	SSA2	B	2	271	5	5	261	271	1	0	0	0	3	96
169	66,67	0320/025831	035201	10	SSA2	B	2	322	31	6	285	319	21	0	0	0	5	89
171	67,68	0320/043458	052938	10	SSA2	B	2	329	45	8	276	325	31	0	0	0	4	84
174	69	0320/063202	064722	10	SSA2	B	2	93	2	0	91	93	1	0	0	0	5	98
177	70	0320/080910	084930	10	SSA2	B	2	243	8	11	224	242	2	0	0	0	5	92
180	71	0320/094031	102811	10	SSA2	B	2	287	6	0	281	285	3	0	0	0	3	98
183	72	0320/111105	120505	10	SSA2	B	2	325	36	7	282	324	28	0	0	0	4	87
185	73	0320/124806	134116	10	SSA2	B	2	320	37	1	282	320	25	0	0	0	5	88
188	74	0320/142419	145929	10	SSA2	B	2	212	20	8	184	211	6	0	0	0	3	87
191	75	0320/160037	165457	10	SSA2	B	2	327	0	0	327	327	0	0	0	0	3	100
194	76	0320/174531	182731	10	SSA2	B	2	253	22	15	216	250	7	0	0	0	4	85
197	77	0320/191658	200638	10	SSA2	B	2	299	31	14	254	298	13	0	0	0	4	85
200	78,79	0320/211331	215321	10	SSA2	B	2	240	6	0	234	239	1	0	0	0	6	98
203	79,80	0320/224931	233031	10	SSA2	B	2	247	3	0	244	247	1	0	0	0	5	99
206	80,81	0321/002631	010651	10	SSA2	B	2	243	2	1	240	243	0	0	0	0	3	99
209	81,82	0321/020210	023500	10	SSA2	B	2	198	6	4	188	197	2	0	0	0	5	95
212	83	0321/035400	042010	10	SSA2	B	2	158	33	0	125	154	15	0	0	0	3	79
215	84	0321/052202	055332	10	SSA2	B	2	190	15	0	175	188	12	0	0	0	4	92
218	85	0321/070000	071500	10	SSA2	B	2	91	4	0	87	91	0	0	0	0	3	96
221	86	0321/083640	091840	10	SSA2	B	2	253	3	0	250	253	0	0	0	0	5	99
224	87	0321/100134	105614	10	SSA2	B	2	329	32	11	286	324	25	0	0	0	4	87
227	88	0321/113911	123231	10	SSA2	B	2	321	30	14	277	319	11	0	0	0	4	86
229	89	0321/131537	140847	10	SSA2	B	2	320	16	14	290	320	2	0	0	0	4	91
231	90	0321/145146	154536	10	SSA2	B	2	324	15	21	288	324	7	0	0	0	4	89
234	91	0321/162828	172348	10	SSA2	B	2	333	37	20	276	329	17	0	0	0	4	83
237	92	0321/180643	185633	10	SSA2	B	2	300	45	21	234	298	21	0	0	0	4	78
240	93	0321/195731	203331	10	SSA2	B	2	217	6	2	209	217	1	0	0	0	3	96
243	94,95	0321/214131	222141	10	SSA2	B	2	242	2	0	240	241	1	0	0	0	3	99
246	95,96	0321/231731	234531	10	SSA2	B	2	169	0	0	169	169	0	0	0	0	4	100
248	96,97	0322/004110	013420	10	SSA2	B	2	320	24	14	282	319	8	0	0	0	3	88
250	97,98	0322/021717	025317	10	SSA2	B	2	217	24	10	183	217	11	0	0	0	3	84
252	98,99	0322/035348	042958	10	SSA2	B	2	218	26	5	187	217	18	0	0	0	3	86
255	100	0322/054611	060611	10	SSA2	B	2	121	2	0	119	121	0	0	0	0	3	98
260	102	0322/085725	094715	10	SSA2	B	2	300	3	2	295	300	1	0	0	0	4	98
263	103	0322/103011	112401	10	SSA2	B	2	324	30	9	285	323	21	0	0	0	3	88
265	104	0322/120700	130010	10	SSA2	B	2	320	30	17	273	315	17	0	0	0	3	85
267	105	0322/134309	142759	10	SSA2	B	2	270	27	7	236	270	12	0	0	0	3	87
269	106	0322/151928	160358	10	SSA2	B	2	268	25	11	232	267	14	0	0	0	4	87
271	107	0322/165651	174151	10	SSA2	B	2	271	25	22	224	270	13	0	0	0	4	83
273	108	0322/183615	192235	10	SSA2	B	2	279	42	24	213	276	20	0	0	0	5	76
275	109	0322/201640	202130	10	SSA2	B	2	30	0	0	30	30	0	0	0	0	18	100
277	109,110	0322/202907	210237	10	SSA2	B	2	202	17	0	185	198	9	0	0	0	4	92
279	110,111	0322/215527	224937	10	SSA2	B	2	326	52	14	260	324	20	0	0	0	4	80

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STS-119 TDRS- 6 EVENT TRACKING SUMMARY LOG

REPORT GENERATION TIME: 20090323/012147 GMT

EVT NUM NUMBER	ORBIT	S												COMMENTS					
		TDRS-	6	AOS	LOS	C	RET	Q	L	PRED	INV	ANM	USE		DCE	NL	TOT	DCE	NL
MMDD/HHMMSS	HHMMSS	I	SERV	P	T	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	HZ	%	F
22	10	0316/134331	140511	10	SSA1	A	1	131	1	2	128	131	0	0	0	0	3	98	
36	15,16	0316/213749	220139	10	SSA1	A	1	144	3	0	141	144	0	0	0	0	3	98	
40	16,17	0316/231523	233903	10	SSA1	A	1	143	7	1	135	141	4	0	0	0	3	94	
53	23	0317/085401	090921	10	SSA1	A	1	93	0	1	92	93	0	0	0	0	11	99	

1
STS-119 TDRS-10 EVENT TRACKING SUMMARY LOG
REPORT GENERATION TIME: 20090323/012147 GMT

EVT NUM NUMBER	ORBIT	S												COMMENTS					
		TDRS-10	AOS	LOS	C	RET	Q	L	PRED	INV	ANM	USE	DCE		NL	TOT	DCE	NL	MIL
MMDD/HHMMSS	HHMMSS	I	SERV	P	T	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	PTS	HZ	%	F	
12	5	0316/060612	063922	10	SSA1	A	2	200	2	0	198	200	0	0	0	0	3	99	
94	39	0318/090528	091038	10	SSA1	B	2	32	25	7	0	31	11	0	0	0	0	0	F

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STS-119 TDRS- 3 TRACKING DATA DAILY REPORT FOR DAY 7
REPORT GENERATION TIME: 20090323/012147 GMT
DAILY EVENTS: 254 TO 276 FROM 20090322/052037 TO 20090322/202834 GMT
MISSION EVENTS: 2 TO 276 FROM 20090316/000345 TO 20090322/202834 GMT

	DAILY	MISSION
# OF EVENTS	5	64
# OF SUCCESSES	5	60
% SUCCESSES	100.0	93.8
# OF USABLE MINUTES	92.2	1119.8
# OF ANOMALOUS MINUTES	1.8	19.3
# OF INVALID MINUTES	4.2	74.5
# OF TOTAL MINUTES	98.2	1213.7
AV. USABLE MINUTES	18.4	17.5
AV. ANOMALOUS MINUTES	0.4	0.3
AV. INVALID MINUTES	0.8	1.2
AV. MINUTES PER EVENT	19.6	19.0
% USABLE	93.9	92.3
% ANOMALOUS	1.9	1.6
% INVALID	4.2	6.1

NO EVENTS WERE RATED AS FAILURES FOR TDRS- 3.

1
STS-119 TDRS- 4 TRACKING DATA DAILY REPORT FOR DAY 7

REPORT GENERATION TIME: 20090323/012147 GMT
 DAILY EVENTS: 247 TO 280 FROM 20090321/235011 TO 20090322/232233 GMT
 MISSION EVENTS: 1 TO 280 FROM 20090315/234355 TO 20090322/232233 GMT

	DAILY	MISSION
# OF EVENTS	15	104
# OF SUCCESSES	13	99
% SUCCESSES	86.7	95.2
# OF USABLE MINUTES	558.3	3410.8
# OF ANOMALOUS MINUTES	17.3	99.5
# OF INVALID MINUTES	39.8	173.7
# OF TOTAL MINUTES	615.5	3684.0
AV. USABLE MINUTES	37.2	32.8
AV. ANOMALOUS MINUTES	1.2	1.0
AV. INVALID MINUTES	2.7	1.7
AV. MINUTES PER EVENT	41.0	35.4
% USABLE	90.7	92.6
% ANOMALOUS	2.8	2.7
% INVALID	6.5	4.7

THE FOLLOWING DAILY EVENTS WERE RATED AS FAILURES FOR TDRS- 4:

EVT YYYYMMDD/HHMMSS SERV	COMMENT
278 20090322/210311 SSA2	26% invalid Doppler, no lock = 13%
280 20090322/225013 SSA2	32% invalid Doppler, no lock = 19%

1
 STS-119 TDRS- 5 TRACKING DATA DAILY REPORT FOR DAY 7
 REPORT GENERATION TIME: 20090323/012147 GMT
 DAILY EVENTS: 246 TO 279 FROM 20090321/231731 TO 20090322/224937 GMT
 MISSION EVENTS: 3 TO 279 FROM 20090316/003430 TO 20090322/224937 GMT

	DAILY	MISSION
# OF EVENTS	15	106
# OF SUCCESSES	15	101
% SUCCESSES	100.0	95.3
# OF USABLE MINUTES	528.8	3942.8
# OF ANOMALOUS MINUTES	22.5	112.5
# OF INVALID MINUTES	54.5	322.5
# OF TOTAL MINUTES	605.8	4377.8
AV. USABLE MINUTES	35.3	37.2
AV. ANOMALOUS MINUTES	1.5	1.1
AV. INVALID MINUTES	3.6	3.0
AV. MINUTES PER EVENT	40.4	41.3
% USABLE	87.3	90.1
% ANOMALOUS	3.7	2.6
% INVALID	9.0	7.4

NO EVENTS WERE RATED AS FAILURES FOR TDRS- 5.

1

STS-119 TDRS- 6 TRACKING DATA DAILY REPORT FOR DAY 7

REPORT GENERATION TIME: 20090323/012147 GMT

DAILY EVENTS: 0 TO 0 FROM 0/000000 TO 0/000000 GMT

MISSION EVENTS: 22 TO 53 FROM 20090316/134331 TO 20090317/090921 GMT

	DAILY	MISSION
# OF EVENTS	0	4
# OF SUCCESSES	0	4
% SUCCESSES	0.0	100.0
# OF USABLE MINUTES	0.0	82.7
# OF ANOMALOUS MINUTES	0.0	0.7
# OF INVALID MINUTES	0.0	1.8
# OF TOTAL MINUTES	0.0	85.2
AV. USABLE MINUTES	0.0	20.7
AV. ANOMALOUS MINUTES	0.0	0.2
AV. INVALID MINUTES	0.0	0.5
AV. MINUTES PER EVENT	0.0	21.3
% USABLE	0.0	97.1
% ANOMALOUS	0.0	0.8
% INVALID	0.0	2.2

NO EVENTS WERE RATED AS FAILURES FOR TDRS- 6.

1

STS-119 TDRS-10 TRACKING DATA DAILY REPORT FOR DAY 7

REPORT GENERATION TIME: 20090323/012147 GMT

DAILY EVENTS: 0 TO 0 FROM 0/000000 TO 0/000000 GMT

MISSION EVENTS: 12 TO 94 FROM 20090316/060612 TO 20090318/091038 GMT

	DAILY	MISSION
# OF EVENTS	0	2
# OF SUCCESSES	0	1
% SUCCESSES	0.0	50.0
# OF USABLE MINUTES	0.0	33.0
# OF ANOMALOUS MINUTES	0.0	1.2
# OF INVALID MINUTES	0.0	4.5
# OF TOTAL MINUTES	0.0	38.7
AV. USABLE MINUTES	0.0	16.5
AV. ANOMALOUS MINUTES	0.0	0.6
AV. INVALID MINUTES	0.0	2.3
AV. MINUTES PER EVENT	0.0	19.3
% USABLE	0.0	85.3
% ANOMALOUS	0.0	3.0

% INVALID

0.0

11.6

NO EVENTS WERE RATED AS FAILURES FOR TDRS-10.

1	59811	STS119dc000	20090315/232805	4	0315/234355	001855
2	59845	STS119dc001	20090315/234112	3	0316/000345	003625
3	59814	STS119dc001	20090315/234112	5	0316/003430	012410
4	59815	STS119dc001	20090315/234112	4	0316/012447	015507
5	59826	STS119dc002	20090316/104110	3	0316/015606	020746
6	59822	STS119dc002	20090316/104110	5	0316/020828	023918
7	59823	STS119dc002	20090316/104110	4	0316/023957	030947
8	59846	STS119dc003	20090316/110408	3	0316/031024	033934
9	59829	STS119dc003	20090316/110408	5	0316/034105	043015
10	59830	STS119dc003	20090316/110408	4	0316/043202	050632
11	59831	STS119dc003	20090316/110408	5	0316/051450	060540
12	59832	STS119dc003	20090316/110408	10	0316/060612	063922
13	59833	STS119dc004	20090316/110442	5	0316/064906	073616
14	59834	STS119dc004	20090316/110442	4	0316/074135	081435
15	59835	STS119dc005	20090316/110514	5	0316/082442	091612
16	59836	STS119dc005	20090316/110514	4	0316/091837	094857
17	59837	STS119dc006	20090316/110546	5	0316/100159	105529
18	59838	STS119dc006	20090316/110546	4	0316/105602	112412
19	59839	STS119dc007	20090316/110623	5	0316/113921	123121
20	59840	STS119dc007	20090316/110623	4	0316/123201	130121
21	59841	STS119dc007	20090316/110623	5	0316/131513	133823
22	59842	STS119dc007	20090316/110623	6	0316/134331	140511
23	59843	STS119dc007	20090316/110623	4	0316/140556	143846
24	59945	STS119dc008	20090316/175751	3	0316/143922	144902
25	59942	STS119dc008	20090316/175751	5	0316/144936	153946
26	59943	STS119dc008	20090316/175751	4	0316/154025	155315
27	59947	STS119dc008	20090316/174042	3	0316/155354	163034
28	59939	STS119dc008	20090316/174042	5	0316/163109	171329
29	59940	STS119dc008	20090316/174042	4	0316/171401	174931
30	59925	STS119dc009	20090316/152857	5	0316/175731	183231
31	59926	STS119dc009	20090316/152857	4	0316/183308	192318
32	59927	STS119dc010	20090316/170433	5	0316/193240	201930
33	59928	STS119dc010	20090316/170433	4	0316/202003	204813
34	59953	STS119dc011	20090316/184058	3	0316/204852	210802
35	59949	STS119dc011	20090316/184058	5	0316/210930	213710
36	59950	STS119dc011	20090316/184058	6	0316/213749	220139
37	59951	STS119dc011	20090316/184058	4	0316/220216	222206
38	60264	STS119dc012	20090316/202138	3	0316/222239	224639
39	60132	STS119dc012	20090316/202138	5	0316/224710	231450
40	60133	STS119dc012	20090316/202138	6	0316/231523	233903
41	60134	STS119dc012	20090316/202138	4	0316/233940	000830
42	60265	STS119dc013	20090316/215506	5	0317/002333	005203
43	60266	STS119dc013	20090316/215506	4	0317/005240	014600

44	60267	STS119dc014	20090316/232943	5	0317/015823	022943
45	60268	STS119dc014	20090316/232943	4	0317/023019	032249
46	60269	STS119dc015	20090317/010454	5	0317/033221	040621
47	60270	STS119dc015	20090317/010454	4	0317/040700	045810
48	60271	STS119dc016	20090317/023709	5	0317/050616	055726
49	60272	STS119dc016	20090317/023709	4	0317/055800	063220
50	60273	STS119dc017	20090317/041232	5	0317/064051	071541
51	60274	STS119dc017	20090317/041232	4	0317/071621	080621
52	60275	STS119dc018	20090317/054934	5	0317/082119	085329
53	60276	STS119dc018	20090317/054934	6	0317/085401	090921
54	60277	STS119dc018	20090317/054934	4	0317/091001	094101
55	60280	STS119dc019	20090317/072511	5	0317/095639	104759
56	60281	STS119dc019	20090317/072511	4	0317/104834	111004
57	60284	STS119dc020	20090317/090249	5	0317/113431	122341
58	60285	STS119dc020	20090317/090249	4	0317/122428	123508
59	60363	STS119dc021	20090317/104230	3	0317/123547	131507
60	60288	STS119dc021	20090317/104230	5	0317/131539	135809
61	60289	STS119dc021	20090317/104230	4	0317/135840	141000
62	60291	STS119dc022	20090317/121424	3	0317/143808	144118
63	60292	STS119dc022	20090317/121424	5	0317/144154	151514
64	60293	STS119dc022	20090317/121424	4	0317/151549	154619
65	60370	STS119dc023	20090317/185801	3	0317/154658	161518
66	60374	STS119dc023	20090317/190706	5	0317/161551	170801
67	60372	STS119dc023	20090317/190706	4	0317/170847	174357
68	60377	STS119dc024	20090317/192427	3	0317/174429	175039
69	60381	STS119dc024	20090317/193052	5	0317/175110	184540
70	60379	STS119dc024	20090317/193052	4	0317/184630	192010
71	60387	STS119dc025	20090317/194303	3	0317/192057	192757
72	60383	STS119dc025	20090317/194303	5	0317/192829	200029
73	60384	STS119dc025	20090317/194303	5	0317/200106	200256
74	60385	STS119dc025	20090317/194303	4	0317/200329	205639
75	60388	STS119dc026	20090317/184420	3	0317/205714	210724
76	60365	STS119dc026	20090317/184420	5	0317/210820	220510
77	60366	STS119dc026	20090317/184420	4	0317/220550	222540
78	60706	STS119dc027	20090317/202436	3	0317/222611	225951
79	60555	STS119dc027	20090317/202436	5	0317/230031	234341
80	60556	STS119dc027	20090317/202436	4	0317/234436	001356
81	60710	STS119dc028	20090317/220132	3	0318/001431	002621
82	60708	STS119dc028	20090317/220132	5	0318/003555	011835
83	60709	STS119dc028	20090317/220132	4	0318/011909	015359
84	60711	STS119dc029	20090317/234143	5	0318/020330	025640
85	60712	STS119dc029	20090317/234143	4	0318/025719	033159
86	60713	STS119dc030	20090318/011729	5	0318/033944	041524
87	60714	STS119dc030	20090318/011729	4	0318/041556	050936
88	60715	STS119dc031	20090318/025336	5	0318/051606	055226
89	60716	STS119dc031	20090318/025336	4	0318/055257	064547
90	60717	STS119dc032	20090318/043002	5	0318/065331	072841
91	60718	STS119dc032	20090318/043002	4	0318/072914	082214

92	60719	STS119dc033	20090318/060638	5	0318/083248	084828
93	60720	STS119dc033	20090318/060638	5	0318/084902	090452
94	60721	STS119dc033	20090318/060638	10	0318/090528	091038
95	60722	STS119dc033	20090318/060638	4	0318/091113	095943
96	60723	STS119dc034	20090318/074715	5	0318/101303	102613
97	60724	STS119dc034	20090318/074715	5	0318/102650	110900
98	60725	STS119dc034	20090318/074715	4	0318/110935	113855
99	60743	STS119dc035	20090318/092652	3	0318/113930	120300
100	60728	STS119dc035	20090318/092652	5	0318/120331	123831
101	60729	STS119dc035	20090318/092652	4	0318/123911	131901
102	60730	STS119dc036	20090318/112141	5	0318/132910	142220
103	60731	STS119dc036	20090318/112141	4	0318/142300	145750
104	60744	STS119dc037	20090318/124218	3	0318/145825	150515
105	60734	STS119dc037	20090318/124218	5	0318/150548	155038
106	60735	STS119dc037	20090318/124218	4	0318/155111	163501
107	60736	STS119dc037	20090318/124218	3	0318/163534	163904
108	60741	STS119dc038	20090318/170938	5	0318/164144	172704
109	60742	STS119dc038	20090318/170938	4	0318/172741	181121
110	60737	STS119dc039	20090318/155315	3	0318/181523	181803
111	60738	STS119dc039	20090318/155315	5	0318/181850	190110
112	60739	STS119dc039	20090318/155315	4	0318/190141	194731
113	60749	STS119dc040	20090318/173213	3	0318/194811	201651
114	60746	STS119dc040	20090318/173213	5	0318/201731	204351
115	60747	STS119dc040	20090318/173213	4	0318/204431	212441
116	60754	STS119dc041	20090318/191056	3	0318/212520	215300
117	60751	STS119dc041	20090318/191056	5	0318/215331	223411
118	60752	STS119dc041	20090318/191056	4	0318/223446	225956
119	61101	STS119dc042	20090318/205101	3	0318/230029	232629
120	61010	STS119dc042	20090318/205101	5	0318/232707	000937
121	61011	STS119dc042	20090318/205101	4	0319/001016	004336
122	61106	STS119dc043	20090318/222929	3	0319/004951	010201
123	61103	STS119dc043	20090318/222929	5	0319/010237	014757
124	61104	STS119dc043	20090318/222929	4	0319/014836	022206
125	61158	STS119dc044	20090319/000613	3	0319/022246	024346
126	61108	STS119dc044	20090319/000613	5	0319/024417	032417
127	61109	STS119dc044	20090319/000613	4	0319/033541	034151
128	61110	STS119dc044	20090319/000613	4	0319/034731	035911
129	61159	STS119dc045	20090319/014218	3	0319/035950	042440
130	61113	STS119dc045	20090319/014218	5	0319/042511	050111
131	61114	STS119dc045	20090319/014218	4	0319/050142	053452
132	61160	STS119dc046	20090319/031820	3	0319/053528	060248
133	61117	STS119dc046	20090319/031820	5	0319/060321	063931
134	61118	STS119dc046	20090319/031820	4	0319/064008	071018
135	61161	STS119dc047	20090319/045627	3	0319/071054	074104
136	61121	STS119dc047	20090319/045627	5	0319/074135	081235
137	61122	STS119dc047	20090319/045627	4	0319/081311	085021
138	61162	STS119dc048	20090319/063636	3	0319/085058	091738
139	61125	STS119dc048	20090319/063636	5	0319/091817	095927

140	61126	STS119dc048	20090319/063636	4	0319/095958	102848
141	61163	STS119dc049	20090319/081647	3	0319/102923	103903
142	61129	STS119dc049	20090319/081647	5	0319/104226	113706
143	61130	STS119dc049	20090319/081647	4	0319/113746	120626
144	61164	STS119dc050	20090319/095504	3	0319/120657	121937
145	61133	STS119dc050	20090319/095504	5	0319/122010	131340
146	61134	STS119dc050	20090319/095504	4	0319/131417	134807
147	61149	STS119dc051	20090319/113158	5	0319/135645	144955
148	61150	STS119dc051	20090319/113158	4	0319/145029	152559
149	61151	STS119dc052	20090319/130939	5	0319/153255	162635
150	61152	STS119dc052	20090319/130939	4	0319/162710	170230
151	61165	STS119dc053	20090319/144606	3	0319/170309	170859
152	61155	STS119dc053	20090319/144606	5	0319/170931	180441
153	61156	STS119dc053	20090319/144606	4	0319/180514	183844
154	61170	STS119dc054	20090319/162359	3	0319/183921	184651
155	61167	STS119dc054	20090319/162359	5	0319/184729	193759
156	61168	STS119dc054	20090319/162359	4	0319/193831	201531
157	61175	STS119dc055	20090319/180250	3	0319/201602	204452
158	61172	STS119dc055	20090319/180250	5	0319/204531	212421
159	61173	STS119dc055	20090319/180250	4	0319/212500	215340
160	61180	STS119dc056	20090319/195852	3	0319/215411	222051
161	61177	STS119dc056	20090319/195852	5	0319/222131	225951
162	61178	STS119dc056	20090319/195852	4	0319/230309	233309
163	61423	STS119dc057	20090319/215524	3	0319/233347	235757
164	61421	STS119dc057	20090319/215524	5	0319/235831	003911
165	61422	STS119dc057	20090319/215524	4	0320/003949	011319
166	61424	STS119dc058	20090319/225659	3	0320/012519	012959
167	61425	STS119dc058	20090319/225659	5	0320/013032	021532
168	61426	STS119dc058	20090319/225659	4	0320/021608	025138
169	61427	STS119dc059	20090320/003429	5	0320/025831	035201
170	61428	STS119dc059	20090320/003429	4	0320/035237	042817
171	61429	STS119dc060	20090320/021150	5	0320/043458	052938
172	61430	STS119dc060	20090320/021150	4	0320/053018	060148
173	61676	STS119dc061	20090320/034902	3	0320/060220	063130
174	61433	STS119dc061	20090320/034902	5	0320/063202	064722
175	61434	STS119dc061	20090320/034902	4	0320/064801	073731
176	61709	STS119dc062	20090320/052622	3	0320/073802	080832
177	61437	STS119dc062	20090320/052622	5	0320/080910	084930
178	61438	STS119dc062	20090320/052622	4	0320/085004	091634
179	61710	STS119dc063	20090320/070735	3	0320/091711	093951
180	61441	STS119dc063	20090320/070735	5	0320/094031	102811
181	61442	STS119dc063	20090320/070735	4	0320/102843	105443
182	61711	STS119dc064	20090320/084843	3	0320/105520	110740
183	61445	STS119dc064	20090320/084843	5	0320/111105	120505
184	61446	STS119dc064	20090320/084843	4	0320/120539	123759
185	61447	STS119dc065	20090320/102531	5	0320/124806	134116
186	61448	STS119dc065	20090320/102531	4	0320/134152	141652
187	61712	STS119dc066	20090320/120159	3	0320/141732	142342

188	61627	STS119dc066	20090320/120159	5	0320/142419	145929
189	61628	STS119dc066	20090320/120159	4	0320/150007	155357
190	61713	STS119dc067	20090320/133651	3	0320/155429	155959
191	61643	STS119dc067	20090320/133651	5	0320/160037	165457
192	61644	STS119dc067	20090320/133651	4	0320/165536	172836
193	61714	STS119dc068	20090320/151527	3	0320/172911	174451
194	61671	STS119dc068	20090320/151527	5	0320/174531	182731
195	61672	STS119dc068	20090320/151527	4	0320/182811	190631
196	61732	STS119dc069	20090320/165119	3	0320/190706	191626
197	61716	STS119dc069	20090320/165119	5	0320/191658	200638
198	61717	STS119dc069	20090320/165119	4	0320/200711	204351
199	61733	STS119dc070	20090320/183217	3	0320/204921	211251
200	61730	STS119dc070	20090320/183217	5	0320/211331	215321
201	61731	STS119dc070	20090320/183217	4	0320/215401	222251
202	61811	STS119dc071	20090320/201338	3	0320/223111	224851
203	61812	STS119dc071	20090320/201338	5	0320/224931	233031
204	61813	STS119dc071	20090320/201338	4	0320/233112	000312
205	62078	STS119dc072	20090320/215006	3	0321/001512	002552
206	62079	STS119dc072	20090320/215006	5	0321/002631	010651
207	62080	STS119dc072	20090320/215006	4	0321/010727	014217
208	62081	STS119dc073	20090320/232522	3	0321/015153	020133
209	62082	STS119dc073	20090320/232522	5	0321/020210	023500
210	62083	STS119dc073	20090320/232522	4	0321/023531	031741
211	62125	STS119dc074	20090321/010033	3	0321/031814	035324
212	62086	STS119dc074	20090321/010033	5	0321/035400	042010
213	62087	STS119dc074	20090321/010033	4	0321/042042	045312
214	62126	STS119dc075	20090321/023733	3	0321/045349	052129
215	62090	STS119dc075	20090321/023733	5	0321/052202	055332
216	62091	STS119dc075	20090321/023733	4	0321/055411	063211
217	62127	STS119dc076	20090321/041637	3	0321/063246	065926
218	62094	STS119dc076	20090321/041637	5	0321/070000	071500
219	62095	STS119dc076	20090321/041637	4	0321/071531	080501
220	62128	STS119dc077	20090321/055548	3	0321/080532	083602
221	62098	STS119dc077	20090321/055548	5	0321/083640	091840
222	62099	STS119dc077	20090321/055548	4	0321/091914	094334
223	62129	STS119dc078	20090321/073846	3	0321/094414	095724
224	62102	STS119dc078	20090321/073846	5	0321/100134	105614
225	62103	STS119dc078	20090321/073846	4	0321/105647	112517
226	62130	STS119dc079	20090321/091657	3	0321/112548	113528
227	62106	STS119dc079	20090321/091657	5	0321/113911	123231
228	62107	STS119dc079	20090321/091657	4	0321/123310	130730
229	62108	STS119dc080	20090321/105035	5	0321/131537	140847
230	62109	STS119dc080	20090321/105035	4	0321/140921	144311
231	62110	STS119dc081	20090321/122942	5	0321/145146	154536
232	62111	STS119dc081	20090321/122942	4	0321/154610	162130
233	62131	STS119dc082	20090321/140500	3	0321/162201	162751
234	62114	STS119dc082	20090321/140500	5	0321/162828	172348
235	62115	STS119dc082	20090321/140500	4	0321/172430	175740

236	62132	STS119dc083	20090321/154417	3	0321/175813	180553
237	62118	STS119dc083	20090321/154417	5	0321/180643	185633
238	62119	STS119dc083	20090321/154417	4	0321/185711	193431
239	62133	STS119dc084	20090321/172326	3	0321/193502	195652
240	62122	STS119dc084	20090321/172326	5	0321/195731	203331
241	62123	STS119dc084	20090321/172326	4	0321/203411	211241
242	62303	STS119dc085	20090321/190232	3	0321/211318	214058
243	62135	STS119dc085	20090321/190232	5	0321/214131	222141
244	62136	STS119dc085	20090321/190232	4	0321/222218	225238
245	62472	STS119dc086	20090321/204145	3	0321/225317	231657
246	62331	STS119dc086	20090321/204145	5	0321/231731	234531
247	62332	STS119dc086	20090321/204145	4	0321/235011	003231
248	62441	STS119dc087	20090321/221655	5	0322/004110	013420
249	62442	STS119dc087	20090321/221655	4	0322/013456	021036
250	62443	STS119dc088	20090321/235358	5	0322/021717	025317
251	62444	STS119dc088	20090321/235358	4	0322/025353	034713
252	62445	STS119dc089	20090322/013120	5	0322/035348	042958
253	62446	STS119dc089	20090322/013120	4	0322/043035	052005
254	62473	STS119dc090	20090322/030720	3	0322/052037	054537
255	62449	STS119dc090	20090322/030720	5	0322/054611	060611
256	62450	STS119dc090	20090322/030720	4	0322/060646	065546
257	62474	STS119dc091	20090322/044713	3	0322/065622	072652
258	62453	STS119dc091	20090322/044713	4	0322/074319	083259
259	62475	STS119dc092	20090322/062705	3	0322/083336	085646
260	62456	STS119dc092	20090322/062705	5	0322/085725	094715
261	62457	STS119dc092	20090322/062705	4	0322/094750	101330
262	62476	STS119dc093	20090322/080639	3	0322/101405	102605
263	62460	STS119dc093	20090322/080639	5	0322/103011	112401
264	62461	STS119dc093	20090322/080639	4	0322/112435	115745
265	62462	STS119dc094	20090322/094149	5	0322/120700	130010
266	62463	STS119dc094	20090322/094149	4	0322/130043	133603
267	62464	STS119dc095	20090322/111908	5	0322/134309	142759
268	62465	STS119dc095	20090322/111908	4	0322/142839	151249
269	62466	STS119dc096	20090322/125447	5	0322/151928	160358
270	62467	STS119dc096	20090322/125447	4	0322/160431	164541
271	62468	STS119dc097	20090322/143409	5	0322/165651	174151
272	62469	STS119dc097	20090322/143409	4	0322/174231	182521
273	62470	STS119dc098	20090322/161000	5	0322/183615	192235
274	62471	STS119dc098	20090322/161000	4	0322/192311	200251
275	62477	STS119dc099	20090322/175017	5	0322/201640	202130
276	62478	STS119dc099	20090322/175017	3	0322/202204	202834
277	62479	STS119dc099	20090322/175017	5	0322/202907	210237
278	62480	STS119dc099	20090322/175017	4	0322/210311	214221
279	62481	STS119dc100	20090322/193056	5	0322/215527	224937
280	62482	STS119dc100	20090322/193056	4	0322/225013	232233